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THE UNIVERSITY OF ALBERTA

A STUDY OF THE ESTABLISHMENT AND OPERATION OF A SATELLITE SCHOOL

©

by

JULIAN P. THOMAS

A THESIS

SUBMITTED TO THE FACULTY OF
GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE
OF MASTER OF EDUCATION IN
VOCATIONAL EDUCATION

DEPARTMENT OF INDUSTRIAL AND
VOCATIONAL EDUCATION

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "A Study of the Establishment and Operation of a Satellite School" submitted by Julian P. Thomas in partial fulfillment of the degree of Master of Education in Vocational Education.

DEDICATION

to

My wife Natalia and our sons

Myles

Neil

Glen

Gerald

ABSTRACT

The business sector of the community possesses a wealth of resources which can be of significant benefit to the total personal development of the student.

This study describes a project undertaken by a school district to enlist the assistance of a business organization in a rather unique and extensive manner in order to provide an additional dimension to its existing school programs.

An all-male class of fifteen Grade XI students received classroom instruction and work experience within one business organization for a period of one semester. The business organization provided classroom accommodation within its establishment. During the mornings on regular school days, students attended classes which comprised English 20, Mathematics 20, or Social Studies 20. Each student registered in two subjects and instruction was provided by a teacher from the Edmonton Catholic Schools. Afternoons comprised Work Experience 15-25 during which time students were rotated through and worked in five different work units of the retail automotive business; namely: Truck Service, Car Service, Office, Parts, and Paint and Body. Students received ten credits for academic achievement and ten credits for Work Experience.

To assess the general success or failure of the project, standardized tests were used in an attempt to ascertain the cognitive and the affective changes which

occurred in the students. Questionnaires were employed to obtain a subjective evaluation of the program from the students and the supervisory staff of the business organization. The classroom teacher expressed his views about the project after its completion and his statements are included in the appendix of this study.

This study did not employ a control group of students. Standardized tests were administered on a test-retest basis while questionnaires were completed at the conclusion of the project.

Although initial results indicated that the students as a group were low achievers and non self-actualized, at the conclusion of the five month project results obtained from the testing program indicated that the students made significant progress in academic achievement specifically and in total personal development in general.

To test for significant differences in personal development a t-Test for Repeated Measures was used with an 'a priori' level of significance set at the 0.10 level of confidence.

The Spearman Rank Order Correlation Coefficient was used to determine the relatedness of various scales.

Following is a brief summary of findings which were derived from this study:

1. The students developed in vocational maturity from a Grade 6.3 level to a Grade 11.2 level.

2. The students appeared to increase in self-actualization by 20 percent.
3. The students' average final report card marks on teacher-prepared tests in core subjects showed an increase from 47.2 percent at the regular high school to 59.5 percent at the satellite school.
4. The students showed a marked increase in acquisition of occupational information as determined by the Occupational Information Scale.
5. The attendance record of the students increased from 88.8 percent at the regular high school to 97.3 percent at the satellite school.
6. Correlations on post-tests, compared with correlations on pre-tests, indicated that the students were more 'typical' Grade 11 students at the conclusion of the project than they were at the beginning.

On the basis of the findings, it was concluded that the satellite school could be of benefit to student development in both the cognitive and the affective domains.

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Chapter I

INTRODUCTION

Although education has undergone considerable change since the latter part of the 19th century, the need for greater and more rapid change in public education has never been greater than it is at the present time. Unless it changes its pattern, our system of public education is headed for a breakdown (Venn, 1970).

Until the latter part of the 19th century, education was for the privileged few with grammar being the focal point of the curriculum (Butts, 1955). At the turn of the 20th century, as the economy of Europe and the United States of America grew, the new so-called middle class emerged and began questioning the value of a grammar-oriented curriculum. It was this group of people that began to demand a curriculum which would be more comprehensive and more relevant to the world in which their children would have to work and live.

It was out of these kinds of concerns that the Federal Government saw fit to give the public an active voice in determining educational policies. Public expression in education was permanently guaranteed by the passing of the British North America Act of 1867, which, at the same time, gave the provinces the responsibility for education. The provinces in turn, have delegated certain kinds of authority to the local school boards.

Education during the 1930's to the present was based largely on the teachings of John Dewey (Philips, 1957). During the 1930's, schools were termed progressive and the enterprise method of teaching was prescribed by the Department of Education (Hodgson, 1967).

Being aware of public dissatisfaction with certain aspects of education in the 1950's, the Provincial Government established a Royal Commission on Education in 1957 in order to try to determine the public point of view and wishes in connection with education for their youth. Following is a brief summary of the recommendations (1959) made by the Cameron Commission on vocational education:

1. The curriculum must allow for differentiation of all levels of the school if pupils are to be retained for a minimum of ten years.

2. Public opinion suggests more emphasis was desired upon occupational guidance, training for a specific job, management of personal finances, and homemaking and handyman skills.

3. A clear cut distinction be made between vocational education and industrial arts. Courses must not attempt to serve a dual function.

4. Industrial arts offerings to be elective, allowing students and parental choice, as to exploratory courses desired.

5. Vocational education must develop saleable skills and knowledge acceptable to business and industry.

6. Vocational education be limited to decentralized regional centres and not an offering of every school.

7. Terminal progress be devised for pupils who by ability or disposition will leave school after age sixteen.

Briefly scanning the past one hundred years of the history of education, it is evident that perhaps the most

significant change which has occurred is that of public involvement and participation.

The practical importance and significance of public involvement in education is found in a proposal articulated by the recent Worth Commission on Education:

> We also see an increase in work study programs and other methods of utilizing community resources in educational exploration (N-12 Educational Task Force, p. 34).

Worth (1972) states that the trend toward integration of general training in the educational system with practical experience in the community at large should be continued and accelerated.

The community provides opportunities for education beyond the classroom. The satellite school concept, which is but one of many ways of utilizing community resources, recognizes a way in which the business community can assist young people to gain experiences which are not available in the typical classroom. Such experiences could include actual involvement in the working world of mechanics, nursing assistants, partsmen, salesmen, and other occupations.

Purposes of the Study

The purposes of this study were:

1. to describe a process of establishing a satellite school which included involvement with a member of the business community,

2. to assess cognitive and affective change of students enrolled in the satellite school, and
3. to collect and report reactions of participants to the project.

Research Questions

This study did not seek to test hypotheses. Rather, information is provided to answer the following questions:

1. What were the logistics involved in the establishment of a satellite school based upon involvement with a business establishment?
2. To what extent will student involvement in a satellite school project evidence an increase in:
   a. academic achievement?
   b. vocational attitude?
   c. occupational information?
   d. self-actualization?
   e. attendance?
   f. intercorrelation values of the above measures?
3. What will be the subjective responses of participants after one semester of involvement with the satellite school?

Scope of the Study

This study involved a group of fifteen male students: twelve from St. Mary's High School and three from Louis St. Laurent High School. This group of students comprised twelve grade eleven students and three grade twelve

students. Students ranged in age from sixteen to twenty-one and all were volunteers for a program that was advertised as being involved with automotive occupations.

Limitations

This study is limited by the following factors:

1. Only one group of fifteen students was involved in the study. All of these students were males and all were involved in a vocational experience within the one occupational area of automotives.
2. During candidate registration, no attempt was made to select students on any 'a priori' basis such as the quality of citizenship in the classroom, socio-economic status of parents and previous school achievement.
3. Only non-matriculation students were involved in the study.
4. This study does not involve the use of a control group of students. It is important to consider this factor during the interpretation of results.

Operational Definitions of Terms

One of the primary concerns under investigation in the operation of the satellite school was to assess cognitive and affective change of students enrolled in the project and to collect and report reactions of participants to the project.

Standardized tests were employed in an attempt to assess cognitive and affective change and all tests were

administered on a pre-test and post-test basis.

Final reactions to the project by the participants, namely the employer, students and teacher, were surveyed by specially prepared questionnaires.

For the purpose of this study the following definitions were used:

1. Work Experience Education

   This term refers to employment undertaken by a student as an integral part of a planned school program which is under the cooperative supervision of a teacher coordinator and the employer (Department of Education, 1971-72).

2. Satellite School

   This is a public school which has its classroom located within a particular business, industry or institution and forms a regular part of the high school program.

3. Achievement

   In this study, achievement refers to the degree of mastery of school subjects as indicated by teacher prepared tests and by the Stanford Achievement High School Battery.

4. Occupation

   For the purpose of this study, the term occupation means engagement in a long-term job which becomes a major focus of a person's activities, and usually of his thoughts (Roe, 1962).

5. Credit

   One high school credit is defined as forty minutes minimum instruction time per week or eighty minutes per week in semestered school exclusive in each case of time for class movement. To earn the credits attached to any course on the high school program, a student must achieve at least a "D" standing in that course (Department of Education, 1972).

6. Teacher Coordinator

   This person has the responsibility of visiting students regularly while they are participating in a Work Experience Education program, in order to assist both the students and the employer with providing the most beneficial type of work experience.

7. Vocational Maturity

   Vocational maturity is more comprehensive than vocational choice. It incorporates attitudes towards decision making, comprehension and understanding of job requirements, planning ability, activity and the development of vocational capabilities as well as the selection of an occupation (Crites, 1965, p. 4).

8. Matriculation

   This term refers to the academic program of studies in a public high school which is intended to give students entrance to university.

9. Non-matriculation

   This term refers to a public high school program of

studies not leading to university entrance.

10. Self-actualization

    This personality trait refers to the inner nature of man which motivates him to aspire to that which he believes he can become. It is the inner motivating force which enables a person to live life more fully and in a more enriched way than does the average person (Maslow, 1962).

11. Time Competence

    Time competence is the efficient use of time.

12. Time Incompetence

    Time incompetence is the inefficient use of time.

13. Inner Orientation

    This term is synonymous with "inner directedness" and refers to the tendency of the individual to initiate and effect action from sources within the self.

14. Other Orientation

    This term is synonymous with "other directedness" and refers to the tendency of the individual to initiate and effect action from sources outside the self.

Chapter II

REVIEW OF THE LITERATURE

Organization of the Chapter

This chapter includes a general review of the history of vocational and industrial education in both the United States and Alberta. In addition this chapter includes a brief examination of some general theories of occupational choice, brief descriptions of studies which lend support for the tests used in this study, as well as references to specific literature on education beyond the regular classroom.

History of Vocational Education in the United States

Thayer (1965) suggests that the hardships and physical labour experienced by the Americans during the colonial period have taught the nation how to survive and to build up the country. This commitment to hard physical labour and the manipulation of nature has been the basis for debates on American education. From the beginning, Americans have persevered in combining the physical practises and intellectual ideology in education.

Venn (1964) presents a detailed account of American Education from the Colonial Period to the present, with particular emphasis on historical events and legislation which served as prelude to the introduction of vocational and industrial education in the regular high school curriculum.

According to Venn (1964) one of the earliest and most important benchmarks in American education was established by Massachusetts in 1642 when the state passed a comprehensive school law which established a minimum level of education for all children. This approach was unique and unprecedented to public education in the United States. This legislation held parents responsible for instructing their children in learning and for providing experiences in labour which would be profitable to the community. Although the law itself was ineffective, two important tenets were established in American education:

1. that education was necessary for the welfare of the colony and
2. that, where necessary, parents might be compelled by public officials to grant children an opportunity to receive an education.

Venn (1964) indicates that even before the Civil War of 1861, manual work was considered beneficial educational experience. In the growing cities of America, philanthropists sought to modify the deleterious effects of social change by teaching children to labour. The increase in poverty and delinquency were good reason to foster this movement. Religious and philanthropic societies founded classes for the teaching of manual skills. Reform and industrial schools were also established to prevent idle, vagrant children from entering into a life of crime. Regular school lessons were combined with plenty of manual

labour. However, rarely did the philanthropic or reform schools reach many of the city youth.

The needs of the civil war had greatly speeded up industrialization in America. Railroads and factories were hastily constructed. Then too, cities such as Chicago, St. Louis, and Cincinnati grew up in the Middle West.

The civil war which ended in 1865, had a disruptive influence on education other than for military purposes, because very young men were required for the armed services and the country was in chaos. Not until the late nineteenth century did manual labour become a part of the public education.

Monroe (1940) indicates that following the civil war, both Runkle and Woodward were instrumental in introducing vocational education into the school curriculum.

In 1878, John D. Runkle, president of the Massachusetts Institute of Technology, proposed the introduction of the 'manual element' into the schools.

C.M. Woodward, professor of mathematics and applied mechanics at Washington University in St. Louis, was also actively seeking to bring manual instruction into the public schools. As dean of the university polytechnical institute in the 1870's, Woodward organized workshop classes to give his students a knowledge of tools and their uses. He received support in 1880 to open a Manual Training School to provide preliminary training for those who desired to later attend the polytechnical institute.

Woodward advocated manual training for all pupils regardless of their career aspirations.

Cubberley (1929) suggests that the American public first became acutely aware of the need for vocational education within its schools during the early part of the twentieth century:

> About 1910, the American people began to realize that a nation such as ours, occupying the place it does in a world of expanding international commerce and increasing competition for world trade, must put trained technical skill as well as mere labour into what it sells, and that this calls for a widespread system of vocational training for our workers. (p. 93)

Responding to public demand for vocational education in the schools, the American Government under the leadership of President Woodrow Wilson, established the Federal Board of Vocational Education. In order to make public demands for vocational education a reality, the Smith Hughes Vocational Education Act was passed in 1917. With reference to the specifics of this act Cubberley stated:

> This new type of instruction promises to revolutionize industrial preparation in the United States, and to give a very effective type of vocational education and placement for those who are to work in factories, offices, ships, or farms, and in the homemaking occupations. (p. 95)

Cubberley regarded the additional costs associated with vocational education as being just as acceptable as any other costs involved in education and commended the passing of the act:

> The Smith Hughes Act has materially enlarged the scope of public education along new lines. (p. 95)

The Smith Hughes Act anticipated the United States' involvement in World War I when workers were necessary for national preparedness. World War I was won by the allies and by the 1920's, vocational educational was firmly established in the United States of America with most school systems in the country offering some manual education at every grade level.

By 1939, more than two million persons were attending vocational education in the United States and on the eve of World War II, vocational education had become an established feature of the education system.

In 1946, after World War II, greater recognition than ever before was given to the roles of industry, the armed services, community, and junior colleges in vocational training, and the federal government increased its funding. (Venn, 1964).

After Sputnik 1 was launched in 1957, schools were criticized for failing to provide high-quality academic programmes. Vocational education was attacked for being insufficiently academically sound, and for teaching skills no longer demanded by the economy. Venn (1964) stated it this way:

> In 1957 came Sputnik. The national spotlight was turned on apparent weaknesses in the educational system and the danger these weaknesses posed to the nation's space and defense effort. The result was the National Defense Education Act of 1958. (p. 114)

The passing of the National Defense Education Act of 1958 was followed by the passing of the Vocational Education Act of 1963 which is considered to be the most important in the legislative history of vocational education since the Smith Hughes Act of 1917. Although new federal-state programs were enacted into law and large financial appropriations have been made available to support the programs, the controversy over the basic philosophy and major objectives of vocational education continues.

Marland (1971), United States Commissioner of Education, is presently seeking a total reformation of education in the United States. Three major recommendations deal directly with the reformation of vocational education programs and are summarized as follows:

1. that every high school student graduate with a saleable skill or the preparation to enter college.
2. that there be a "new educational unity" that would break down the barriers between things academic and things vocational. Also, that the term "vocational" be replaced by the term "career".
3. that schools introduce strong encouragement to think in career terms at a younger age with the trust that this will help to restore a sense of purpose among young people who now lack this sense.

History of Vocational Education in Alberta

Prior to 1905, Canadian curriculum focused mainly on the teaching of the proverbial three R's.

Courses in manual training and domestic science were introduced in Alberta between 1905 and 1912. Although they were intended primarily to serve as general education, one of the major aims of these courses was basically vocational as these courses were to develop occupational talents and thus give the student some indication of vocational preference.

Due to a sharp increase in enrollment in Alberta high schools between 1913 and 1920, the Department of Education found itself in a position of having to make significant changes in the formal curriculum in order to better meet the needs of a wider range of students (Hodgson, 1964). As a result, courses in domestic science, manual training, and agriculture were introduced into the high school. Also, commercial subjects were expanded to include typing, business forms, commercial law and commercial correspondence. For those students not going on to university or normal school for teacher training, the Department of Education, during this period of time, authorized certain courses which were designed to lead directly into jobs eg. sewing, printing, household economy and woodwork (Hodgson, 1964).

The next major revision in curriculum did not come until 1922 to 1936. During this period, the Department established six routes to graduation at the high school level: normal entrance, matriculation, general, commercial, technical and agricultural. Hodgson (1964) indicated that these changes reflected society's expectations of education

which would help its young people to find a place in a complex and rapidly changing society.

From 1935 to 1963, the aims of public high school education remained relatively unchanged. Hodgson (1964) listed these aims as follows: intellectual development, physical health, aesthetic development, religious knowledge and development, vocational preparation, mental health, morality and good character, preparation for home and family life and development of citizenship.

However, it is significant to note that during the 1950's, the federal government made a decision to vastly increase its involvement in the promotion of vocational education through the Department of Labour (Lowe, 1963). High unemployment and the sharply increased need for skilled labour prompted the federal government to draw up two consecutive agreements with the provincial governments: The Vocational Schools' Assistance Agreement (1955-1957) and The Vocational and Technical Training Agreement No. 2 (1959-1964). These two agreements provided provinces with large sums of money without any matching of money on the part of the provinces in order to implement courses in vocational education. Also, the federal government defined vocational education as programs in which the student spent fifty percent of his time in the vocational area at an education level above grade nine.

As was stated in the introduction of this thesis, the Royal Commission on Education (1959) expressed the need

for an extensive program in vocational education with the result that by 1961, the half-day program became a part of the high school curriculum and by 1968, vocational programs were being offered extensively and effectively all across Canada.

Despite increased federal expenditures, vocational education is often berated as "second class education" (Newsweek, August, 1971). This particular edition of the Newsweek described vocational education as "dull and inadequate -- a dumping ground for pupils deemed incapable of coping with academic work". At the same time, a struggle continues between the general educationist and the vocationalist for control of vocational programs.

As the seventies began, it was clear in both Canada and the United States that a dramatic rethinking of vocational programs was necessary. In Alberta, as an example, the Department of Education is introducing a new "matrix" approach to vocational education beginning with the 1972-1973 school year (Harder, 1971).

With the recent stringent budgetary controls set down for education by the governments of both Canada and the United States it is becoming apparent that the school districts of both countries will be forced to develop new, effective and efficient vocational programs at less cost to the taxpayer.

Objectives of Vocational Education

The Department of Education of Alberta, Senior High

School Handbook (1972-73) lists four major objectives for schools. One of the four listed has to do directly with those objectives relevant to vocational education Objective Number 4 (Occupational Preparation) reads as follows:

> The school should help each Alberta youth to develop those understandings and attitudes that make him an intelligent and productive participant in economic life; and to assist him to develop saleable skills, or prepare for post-school vocational training. The youth should:
>
> a) Become familiar with the range of vocational opportunities open to him.
> b) Learn how to take full advantage of the school and extra-school guidance services.
> c) Achieve an acceptance of his own capacities as indicated by professional analysis of interests, socio-economic status, aptitudes, personality, and native intelligence. (p. 2)

More specifically, J.D. Harder (1970a) states the following objectives for industrial education:

> a) To develop basic competencies, both academically and in work skills to enter either a job or a post-high school institution for further education.
> b) To provide courses that serve as a vehicle in helping students relate their academic learnings to vocational competencies.
> c) To provide the curriculum content in aiding students to develop fundamental tool and procedure skills that prepare them to enter a family of occupations.
> d) To provide the environment whereby students may develop sound attitudes, acceptable work habits, and achieve a feeling of accomplishment. (p. 7)

Therefore, Alberta's educational policy intended that vocational education was to be an integral part of the student's total education.

Studies of Specific Influence

Burt (1970) stated that the business community is prepared and willing to assist the school with solving more than just educational problems as shown by the following statement:

> In September, 1969, Fortune Magazine asked 300 business executives this question: How far should business go in trying to solve social problems? The results showed industry to be increasingly involved with societal activities that go beyond the quest for profits and also that some activities are far more popular than others. 'Support of education' was rated number one on this hit parade. (p. 35)

Burt then goes on to conclude that:

> If it is true, as reported in the November, 1969, issue of Nation's Schools, that the typical school superintendent is overwhelmed by financial problems and worries about school-community public relations, he should be delighted to find industry ready, willing and able to offer assistance. As in so many other areas of daily living, it is surprising how much help is available if you but ask for it. (p. 36)

Ford (1970) suggests that management of business and industry get involved with community affairs in general and states that strict orientation towards production and profit is no longer enough:

> Instead, we should start thinking about changes in public values as opportunities to profit by serving new demands. We have to ask ourselves, what do people want they didn't want before, and how can we get a competitive edge by offering them more of what they really want. (p. 17)

The American schools have a tendency to attach a good deal of importance to life experiences beyond the traditional classroom for their students. A notable example of

this is the Parkway Program in the Philadelphia School System (Williams, 1970). Entire schools at the secondary level are closed for varying periods of time - a system which places all students on work experience on a full day basis for several weeks to pick up practical experience. At the same time, teachers, too, spend full days in the world of work along with their students - supervising and learning the contemporary trends of business, industry and institutions within their immediate community. After the practical experience students return to the classroom for theory. Williams (1970) describes the program as follows:

> The central idea behind the Antioch-Columbia project is the integration between the community and the school and this concept has begun to filter down to the secondary schools. For instance, in 1969, a group of 140 students was selected for an experimental school in the Philadelphia system. Called the Parkway Program, high school students used the hospitals, university laboratories, print shops, a music academy, an art museum and corporate offices in the city, where experts in the business and professional world served as teachers.
>
> The program, similar to those developed by Antioch, utilizes community resources. It is the focus on the community which serves as the centre for the learning experience. (p. 84)

A unique experiment was tried several years ago when a college in California hired an ocean liner and took several hundred of its students for a trip around the world (Williams, 1970). During the journey the ship bacame a floating school which provided not only for pure academic studies but for real life experiences throughout the world as well.

Finally, Mr. G. Williams' concluding paragraph can be construed as a challenge to present-day education:

> In spite of these drawbacks, today's students are seeking relevancy in terms of involvement. Only the future can answer the question: "How far will the schools go to supply education beyond the physical institution?" (p. 85)

Work Experience in the School Curriculum

Before the passing of the British North America Act in 1867, it was a common and accepted fact that man went directly into a work situation without any intervening preparation. With the passing of the British North America Act and with the emergence of the middle class society at the turn of the century, education became an important intervening factor between man and work. A short period later, American school systems introduced an additional intervening factor between man and work and that was work itself. Therefore, part-time work experience programs have been officially in operation in the United States since the Smith-Hughes Act of 1917 (Connell, 1966).

A review of the history of work experience programs in American schools suggests that these types of programs which combine classroom instruction with on-the-job training, make a significant and worthwhile contribution to education.

Work experience is not a new concept in education. Work programs were first introduced into the American schools about the turn of this century, have grown steadily and are most extensive at the present time. Probably the

most recent and most significant research information on current work programs comes from two nation-wide surveys of existing programs in the United States. The first of these surveys was conducted by a National Society for the Study of Education (1964) Yearbook Committee headed by D. Schreiber who stated that work programs can play an important role in assisting students in achieving success and self-identity:

> The function of the school is to provide the means for them to do so by offering alternatives to the academic program. If work experience is important in the success of growing up, and many educators believe that it is, the schools have the responsibility of making Work Experience Programs available to those pupils who need them. (p. 282)

Regarding the necessity and availability of these kinds of programs, Schreiber went on to say:

> Unmistakably, these two studies, and there are others, highlight the necessity of starting work experience programs in the seventh grade of the junior high school. They should continue through senior high school and lead to graduation. (p. 286)

W.J. Schill at the University of Illinois conducted a survey of all the major work programs in the fifty states. Keeping the vocational aspect of the student in mind, it is important to note that Schill was of the opinion that work experience appears to be very instrumental in the development of worthwhile attitudes:

> Although it has not been pinpointed, (by this study) it has been hypothesized that there is considerably more attitude formation in the work environment than there is in the

> educational environment, at least attitude formation in terms of socially necessary attitudes for continued employment. (p. 2)

Growing Trend Toward Education Beyond the Classroom

One seemingly worthwhile method of enlisting community involvement in education is through implementation of well planned work experience education programs.

Making "the world the classroom" is a trend which is on the increase in present day education. Both in the Americas and abroad, examples of this type of approach to education present themselves in many and diverse ways: field trips, work study, work experience, cooperative education, apprenticeship programs, et cetera.

That new approaches to education will have to be discovered was succinctly stated by P. Berton, guest speaker at the Congress on the Future of Education, held in Edmonton in November, 1970. Berton stated basically that the whole system of public education is obsolete and predicted that a good deal of education in the future will take place beyond the traditional classroom setting:

> If there is a school building at all, it will be a home building, much like the home room now. Kids will go all over the town and all sorts of buildings for learning experiences. (p. 2)

The trend towards extending educational experiences beyond the classroom is fast becoming an integral part of the school curriculum. In the near future it may become difficult to differentiate between the school and the community (Tofler, 1970).

Greater community involvement in education could have favourable financial implications for the educator in this day of "tight budgets". Tofler states it this way:

> For those educators who recognize the bankruptcy of the present system, but remain uncertain about the next steps, the council movement could provide purpose as well as power, through alliance with, rather than hostility toward, youth. And by attracting community and parental participation - businessmen, trade unionists, scientists and others - the movement could build broad political support for the superindustrial revolution in education. (p. 405)

Also, acquiring education outside of the traditional school setting appears to be an instrinsically desirable approach to public education in general. In this regard, Tofler (1970) states:

> We have noted, for example, that the basic organization of the present school system parallels that of the factory. For generations, we have simply assumed that the proper place for education to occur is in a school. Yet if the new education is to stimulate the society of tomorrow, should it take place in a school at all? (p. 405)

The Alberta Teachers' Association in a brief submitted to the Worth Commission on Educational Planning, predicts that by the turn of this century there will no longer exist the sharp distinction between school and the world of work as it does today (Alberta Teachers' Association, 1970).

Some of the impetus for a greater work-orientation within our schools has been derived from public opinion which was expressed by the Royal Commission on Education (Alberta, 1959). A brief submitted to the Royal Commission on Education at that time pointed out the wishes of the

general public for more emphasis on job preparation as opposed to university preparation. At the same time, the brief indicated that the public in general desired more emphasis on the practical things of education as opposed to intellectual (Andrews, 1959).

At the same time, it is important to note that this project does not propose to combine a storefront school approach with work experience but rather would possess the commonality of teaching students off campus.

Community involvement through work programs would assist in further breaking down the dichotomy which now exists between school and work. This dichotomy often tends to fractionate the community into abstruse and often meaningless components (Harder, 1970b). Harder states:

> One approach to developing the concept of the need and value of work is for young people to become employed. This act of becoming part of the work-a-day world, even for a limited time, can provide experiences that no school program can simulate, experiences that are central to general education. (p. 2)

The over-riding aim of utilization of work programs would lie in the realm of general education rather than in specific job training. In addition to the aim of fostering general academic competence, the other aims would include the discovery of abilities and interests of the individual, the employment opportunities, the development of desirable work habits and attitudes, and understanding the social aspects of the business organization as they relate to the rest of the community.

Levin (1970) states that education should yield two types of benefits: private benefits to the students and social benefits to the community at large. Therefore, it might be desirable for students not only to observe the value of work in our society but also to recognize the fact that they are expected to make a contribution towards making our world a better place in which to live.

Instruments Used in the Study

In order to answer the research questions posed by this study, standardized tests and specially prepared questionnaires were employed. The areas of immediate concern were academic achievement, vocational development, occupational information and psychological development.

Tests were selected for the purpose of providing a comprehensive assessment of personal development and to monitor the success or failure of the total project. Furthermore, the tests were selected and employed primarily for the purpose of deriving evaluations on the subjects as a group and the program as a whole. L. Goldman (1961) suggests that this type of 'group approach' to an untried program is a valid method of evaluation. Goldman states it this way: "With an 'experimental' approach, the concern is less with individual differences and more with the effects of 'treatments' (courses of study, jobs, psychotherapy) on the people in general." (p. 12)

Following is a list of tests and questionnaires used in the study along with a brief summary of related

literature and discussion which is intended to provide the reader with some idea as to why they were selected.

1. The Stanford Achievement Test: The Stanford Achievement High School Battery comprises seven individual tests. The most recent edition (1964) of this test was used. The battery tests for growth in achievement in English, Numerical Competence, Mathematics, Reading, Science, Social Studies and Spelling. The entire battery requires seven hours and fifty-eight minutes to administer. Final results provide grade placements and stanine ratings which range from grade seven through grade twelve inclusive.

The content validity was established by careful examination of appropriate high school courses being offered and the various types of high school texts being used and by consulting with experts in the various subject matter fields.

The reliability coefficients were obtained by different procedures and a detailed listing of coefficients for each grade and subject is presented in the Stanford Achievement Test Manual on page 22.

The Stanford Achievement High School Battery was selected because of its apparent applicability to the satellite school project. According to Gardner (1964), principal author of the High School Battery and Manual, the battery was prepared to test primarily for growth in educational achievements in a modern high school. In addition, the test items were designed to test the student's

ability to make practical applications of what he has learned as reflected by the objectives of general education. Gardner emphasizes this unique aspect of the test this way:

> In a society in which people are concerned daily with business and technical activities, at home and at work, it seems appropriate to evaluate all students with regard to their fitness to meet such demands. (p. 7)

2. The Vocational Development Inventory: The Vocational Development Inventory tests for vocational maturity. This is an important aspect of the individual's total development as this personality trait generalizes to the individual's future occupation (Crites, 1965). Crites regards this type of development as requiring a good deal of consideration and attention during the student's formative years. The concept of vocational maturity as stated by Crites (1965) "is more comprehensive than vocational choice". He further maintains that vocational maturity incorporates attitude towards decision making, comprehension and understanding of job requirements, planning activity, ability and the development of vocational capabilities as well as the selection of an occupation.

The Attitude Test of the Vocational Development Inventory used in this study consists of 50 true-false statements about (a) involvement in the vocational choice process, (b) orientation to the world of work, (c) independence in decision making, (d) preferences for sources of job satisfaction, and (e) conceptions of choice and work (Crites, 1969). A student identifies the item as

either 'true' or 'false' and receives a vocational maturity score based upon how many times he answered in the same way as grade five through grade twelve students who were used by Crites as the criterion group for empirically deriving the scoring key.

The reliability of the Attitude Test has been appraised in two ways (Crites, 1969): (a) by computing internal consistency estimates and (b) by determining test-retest stability coefficients. In computing the internal consistency estimates, it was found that the average coefficient was 0.74. Crites (1969) points out it was not unanticipated to obtain estimates in the 0.70's. "In general, they are consistent with the substantive complexity of the scale." (p. 47)

The content validity of the Attitude Scale, as reported by Crites (1969), was investigated in an unpublished Master's thesis by D.W. Hall (1963). Hall had ten expert judges (all counselling psychologists) answer each of the items on the scale in what they considered to be the vocationally mature position. Of the 50 items, the judges agreed with the scoring key 37 times. This represents 74 percent agreement between judges and the key. "Thus, the Attitude Scale would appear to have acceptable content validity . . ." (Crites, 1969, p. 50)

A number of related studies indicate a positive relationship between vocational maturity, academic achievement and psychological well being and academic achievement.

Crites (1965) conducted a three year study on high school students, grade ten through grade twelve, and the results of this study indicated a positive correlation between vocational maturity and educational achievement. The Vocational Development Inventory (VDI) was used in the entire study for each grade level.

Adsbury (1968) found a correlation of 0.34, significant at the 0.01 level, between vocational maturity as determined by the Vocational Development Inventory and academic achievement as determined by the Stanford Ahievement Test: High School Battery.

Bartlett (1968) reported a study which showed a positive relationship between vocational maturity as determined by the Vocational Development Inventory and self confidence, achievement and self-actualization. He concluded that the higher scorers on the Vocational Development Inventory were more assertive, persistent, goal oriented and independent.

Both Caplow (1954) and Super (1957) state that providing students with job experience is important as a part of the school curriculum. Caplow stated that he is concerned about how remote many high school students are from the reality of work. Super states that it is the school's responsibility to provide real, on-the-job experiences if the student is to experience total self-development.

In an attempt to measure this type of vocational

maturity, the Vocational Development Inventory was selected. Crites (1965) states that there are relatively few measures of vocational maturity in existence and those that do exist suffer from serious shortcomings. Crites then goes on to state:

> The Vocational Development Inventory has been conceived and constructed to measure more completely (than previous procedures) the behavior domains of choice, competencies and attitudes in vocational maturity. (p. 7)

The Vocational Development Inventory, as stated by Crites (1965) is ". . . an empirically constructed scale which assesses verbally stated vocational behaviors that presumably mature as the individual grows older and progresses through the educational system." (p. 82)

3. The Occupational Information Scale: For the purpose of this study, it was presumed that the wide exposure to occupations which the student receives while on work experience would provide the individual with a good deal of valuable occupational information. Blocher (1968) states:

> Realistic and well elaborated concepts of self and the ideal self are very important. The adolescent needs exposure to large amounts of realistic information about the world of work. (p. 58)

Mason and Haines (1965) suggest that work experience programs should be an integral part of the secondary school curriculum. Both authors indicate that work experience programs provide the most realistic approach to providing occupational information and, therefore, work programs

have much to contribute to the total education of the student.

Students need occupational information in order to make wise career decisions. Zingle et al (1968, p. 13) and O'Hara (1968, p. 636) suggest that to make a realistic educational-vocational decision, a student must know himself, the world of work and the relationship between the two.

The Occupational Inventory Scale was selected for this study as it was originally designed to measure the acquisition of occupational information from literature and from participation in work experience as well.

Ostashewski (1969), author of the Occupational Inventory Scale, states that experiences acquired through participation in a work experience program provide the student with a good source of occupational information. Ostashewski goes on to state that the Occupational Inventory Scale is essentially an achievement test which could validly be used to ascertain the amount of information a student acquires from the various sources of occupational information including work experience.

The test comprises two sets of forty items which were developed by direct reference to The Dictionary of Occupational Titles: Third Edition. Four occupations from each job class 000 to 900 were chosen randomly, yielding a variety of questions which apply to forty different occupations.

One set of items required the students to choose the best three job aspect statements to describe the title specified. The other set required that students choose one of the three job titles, ie. the one most representative of the job aspect description contained in the item stem. The order of the correct response and distractors was randomized in both sets.

Ostashewski (1969) states that "Content validity was accrued by using generally accepted sources of occupational information, eg. occupational monographs." (p. 14) The reliability estimates for the Occupational Information Scale range from 0.44 to 0.68.

The Occupational Inventory was designed primarily to test the amount of information a student acquires from such sources as literature on occupational information, audio-visual presentation of information, and from actual participation in the world of work as would be provided by a regular school work experience program. A copy of the Occupational Inventory is included in Appendix F, page 111 as this inventory is not readily available from standard sources.

4. The Personal Orientation Inventory: Both Maslow and Rogers express the concern that the individual should be provided with many opportunities to experience things first-hand and if given an opportunity to do so, this individual becomes more psychologically healthy and more self-actualizing as a result (Rogers, 1964 and Maslow, 1962).

Rogers (1964) states that most people have introjected values which are taken from others at the verbal level. Rogers says that the individual must be given a chance to experience and to evaluate his own experiences. Maslow (1962) states that the individual, if given an opportunity to experience by participation, will push towards a fuller and fuller life. According to Maslow, this striving tendency for man to become that which he thinks he can become, is called self-actualization.

Sharing the common beliefs of Maslow, Rogers and other eminent psychologists, Shostrom developed the Personal Orientation Inventory. In general terms, this particular inventory, unlike so many other types of psychological inventories, tests for extent of psychological health and not for psychological impairment. Shostrom (1963) states that the items used in the Personal Orientation Inventory were derived from theoretical formulations of many writers in Humanistic, Existential or Gestalt Therapy. Shostrom (1963) further indicates that the major constituents of the inventory ". . .include Maslow's concept of self-actualization, Reisman's system of inner and other directedness and May's and Perl's concepts of time orientation." (p. 3)

The Personal Orientation Inventory is an inventory for the measure of self-actualization. The inventory comprises 150 items, each of which offers paired and opposite value judgements. All items are scored for two

basic scales of self-actualization: (a) support scale which comprises 127 items and represents a ratio of 'other-orientation' to 'inner-orientation', (b) time scale which comprises 23 items and represents a ratio of 'time incompetence' to 'time competence'. The support scale was developed to measure whether an individual reactivity is basically 'other' oriented or 'self' oriented. According to Shostrom 'other' oriented may be construed to mean 'other' directed and 'self' oriented as 'self' directed. The time competence scale, on the other hand, was developed to measure the degree to which the individual effectively uses his time. Shostrom (1963) suggests that mental health is not absolute and that, therefore, the self-actualization aspect of mental health can be validly considered in terms of a support ratio and a time ratio, both of which are interrelated.

The reliability of the Personal Orientation Inventory was established for the support and time ratio scores only. The reliability coefficient of 0.93 for the support ratio score and 0.91 for the time ratio score was based on 158 normal adult subjects who were attending lectures at the University of Los Angeles, California.

The content validity was established by administering the inventory to a variety of individuals. These individuals comprised known relatively self-actualized individuals and ranged through known relatively non-self-actualized individuals (Shostrom, 1963). Some 864 adults were used to

establish validity. It is interesting and important to note that this figure includes 150 patients in various stages of therapy as well as 561 college freshmen. Means for various groups tested are provided in detail in the "EITS Manual for the Personal Orientation Inventory" on pages 6-8 inclusive. The Personal Orientation Inventory was selected because of its high content validity, in relation to self-actualization. It was initially assumed prior to the beginning of the satellite school project that students, because of the broad exposure to the world of work, might well become more 'time competent' and more 'inner directed'.

Both Maslow and Rogers share the common belief that first-hand experiences enhance an individual's chances of becoming more self-actualized (Rogers, 1951 and Maslow, 1962).

The Personal Orientation Inventory was selected because, unlike many other psychological inventories, it tests for mental health and not for mental illness.

5. Questionnaires: Specially prepared questionnaires were developed in an attempt to obtain what could primarily be considered a subjective evaluation of the total project. These questionnaires are presented in the appendices and the reader is invited to make his own value judgements as regards to content validity.

Summary of the Literature

In retrospect, it is evident that education in both

Canada and the United States has changed markedly over the last two centuries. Education has evolved from a grammar-oriented system of the colonial period to a highly diversified system of today. Schools today offer a wide variety of programs to their students, both in and out of school. The satellite school project represents an attempt to present educational experiences beyond the school walls.

In order to assess cognitive and affective changes which occurred in the students while attending the satellite school the following testing program was implemented:

1. The Vocational Development Inventory was used to assess growth in vocational maturity of attitude.
2. The Personal Orientation Inventory was used to asses growth in self-actualization.
3. The Stanford Achievement High School Battery and teacher-prepared tests were used to determine growth in academic achievement.
4. The Occupational Information Scale was used to assess growth in acquisition of occupational information.

In order to collect and report reactions of participants to the project, specially prepared questionnaires were administered to the employer and the students at the conclusion of the project. The teacher's reaction to the project was obtained by a specially teacher-prepared paper which was submitted at the conclusion of the project.

Chapter III

LOGISTICS INVOLVED WITH THE IMPLEMENTATION OF A SATELLITE SCHOOL

Introduction

The first purpose of this study was to record the logistics of establishing a satellite school at an employer site. This chapter speaks to the necessary logistics.

Population

The population consisted of a total of fifteen male students: twelve grade eleven students and three grade twelve students. Twelve of this total number of students were selected from St. Mary's High School and three from Louis St. Laurent High School.

Both high schools are in the Edmonton Catholic School System. At the time of this study, the enrollment of both St. Mary's and Louis St. Laurent High Schools was approximately the same: 425 in each school. Both schools offered a similar type of curriculum and neither offered a vocational education program.

The students were all residents of the city of Edmonton and all were admitted to the satellite school project before the end of the first semester of the 1971-72 school year. Students ranged in age from fifteen to twenty-one and all expressed an interest in obtaining work experience in automotives. The only other requirement

of the students was that all would take a common core of courses which would not require laboratory work. The final group of students registered in two courses selected from English 20, Social Studies 20 and Mathematics 20. This combination of academic subjects enabled each student to register for ten credits.

For the remainder of the day, students registered in two other courses designated as Work Experience 15 and Work Experience 25. Each course carried a value of five credits which, when added to the credit value of the academic courses, enabled each student to earn the maximum of twenty credits towards a high school diploma for the semester. Table I on page 41 provides specific information on students participating in the study by grade, age and program.

Operation of the School

Healy Ford provided classroom accommodation for the teaching of academic subjects as well as work stations for the work experience portion of the day. Regular classroom instruction was conducted from 9:00 a.m. until 12:00 noon and the Work Experience Program was operated from 1:00 p.m. to 3:30 p.m. daily, Monday through Friday, on regular school days.

The classroom was located on the second floor of the Healy Truck and Body Centre Limited at 10616-103 Avenue, Edmonton, Alberta. All classroom materials and resources

were provided for by the Edmonton Catholic School District while supplementary service costs such as housing, water, power, supervisory services and janitorial services were sustained by the cooperating employer.

The Administration of the Satellite School

For administrative purposes, the satellite school was operated as an extension of St. Mary's High School with Mr. E. Turnbull as principal.

The teacher selected for the project, Mr. J. MacNeil, taught regular high school subjects at Healy Motors and was directly responsible to Mr. E. Turnbull.

Overseeing the project for the employer was Mr. J. Morris, coordinator of parts and service while the teacher coordination and project coordination was provided by the supervisor of work experience programs (the writer) for the Edmonton Catholic Schools.

Only three students from Louis St. Laurent were enrolled in the satellite school project. Therefore, for administrative convenience, the school registration of these three students was transferred from Louis St. Laurent to St. Mary's. For the duration of the project, all students who attended the satellite school were subject to rules and regulations set down by the administration of St. Mary's High School.

Preliminary Considerations

A paper introducing the concept of the satellite

TABLE I

STUDENTS PARTICIPATING IN STUDY BY GRADE, AGE, AND PROGRAM FOR THE PERIOD FEBRUARY 1, 1972 TO JUNE 22, 1972

STUDENT	GRADE	AGE FEB. 1 YRS. MO.	PROGRAM AT SATELLITE SCHOOL	
			9:00-12:00 A.M.	1:00-3:30 P.M.
A	XI	17-2	Eng. 20, S.S. 20	Work Exp. 15/25
B	XII	18-9	Math 20, Eng. 20	Work Exp. 15/25
C	XI	18-0	Math 20, S.S. 20	Work Exp. 15/25
D	XII	17-11	Eng. 20, S.S. 20	Work Exp. 15/25
E	XI	18-2	Math 20, S.S. 20	Work Exp. 15/25
F	XI	17-6	Math 20, Eng. 20	Work Exp. 15/25
G	XI	17-2	Math 20, Eng. 20	Work Exp. 15/25
H	XI	17-7	Math 20, Eng. 20	Work Exp. 15/25
I	XI	16-11	Math 20, Eng. 20	Work Exp. 15/25
J	XI	16-6	Eng. 20, S.S. 20	Work Exp. 15/25
K	XII	21-2	Math 20, S.S. 20	Work Exp. 15/25
L	XI	17-4	Math 20, Eng. 20	Work Exp. 15/25
M	XI	17-3	Math 20, S.S. 20	Work Exp. 15/25
N*	XI	17-2	Math 20, S.S. 20	Work Exp. 15/25
O*	XI	18-6	Math 20, S.S. 20	Work Exp. 15/25

[*] Terminations

school was first presented to the directors of the Edmonton Catholic Schools in January, 1970.

The purpose of this working paper was two-fold:

1. It was intended to elicit reaction from individual members as to the possible feasibility of the program and
2. It was to provide valuable feedback as to the most effective way in which a project of this type might be incorporated into the regular high school curriculum.

The response from the directors was favourable and on the basis of the numerous constructive criticisms received, a more comprehensive proposal was drafted for further consideration by the administration. By a decision of the superintendent of the School District, the final draft of the proposal was submitted to the Innovative Projects Board of the Department of Education along with official application forms for the funding of the project.

In June, 1971, the Innovative Projects Committee approved the project with the usual understanding that the total costs would be equally shared by the Department of Education and the Edmonton Catholic Schools. The employer did not receive any funding for his participation in the project.

Initial Assumptions as to Possible Benefits

It was initially assumed that a satellite school might be of benefit to each participant in the following manner:

1. Student:
   - a) Education might be made more meaningful to the student as a result of participation in actual work situations.
   - b) Work stations can provide first-hand career information.
   - c) A smaller class might provide the student with a more personalized opportunity to become more successful with academic subjects.
2. School District:
   - a) The close partnership between employer and school district in a satellite school project could enable the school district to better keep abreast of changes occurring in the business.
   - b) Long range goals might envisage industry sharing the cost of education. Since industrial resources might be utilized, cost of education could be reduced.
   - c) The satellite school could serve as a vehicle for increased community involvement.
3. Employer:
   - a) Participation in a satellite school project could provide the employer with an opportunity to participate in an education program.
   - b) Participation in a satellite school project could provide a unique method of selecting future employees.

Preliminary Communications

An initial press release by the Edmonton Catholic Schools to inform the public about the project, brought further assistance from the news media. Within several days the public received a description of the project as planned from the three local television stations, the Edmonton Journal, the Western Catholic Reporter and radio stations CJCA and CFRN.

In order to create a good community of understanding regarding the specifics of the project, the parents, students and participating employer were invited to an evening meeting at St. Mary's High School. At this time, prior to registration of students for the project, all parties discussed the various aspects of the program in a friendly and informal manner.

Following this meeting, the employer provided prospective students with an opportunity to tour the automotive establishment in order to acquire a "feel" for the occupation prior to registration for the project. During the tour the students were again provided with ample opportunity to discuss individual points of concern.

Legal Responsibilities

In order to secure the school district's position in this unconventional type of educational program, two areas of concern had to be resolved:

1. To ascertain that the classroom associated with the

business organization would, in fact, be an integral part of the school system and

2. To ascertain that both the employer and the school district carried adequate insurance protection against accident and injury.

In order to resolve these issues, meetings were held with both the solicitor and the insurance broker for the school district.

The legality of the logistics involved with associating the classroom with the business organization was resolved by virtue of terms outlined in a legal agreement form which was to be signed by one representative for the business organization as well as one representative for the school district. A copy of this formal agreement form is included in the appendix and deals with the following matters:

1. Granting of license to the school board to use the business premises for the purpose of classroom instruction.
2. Granting of license for the school board to use the employer's shop for work experience.
3. Age of students and number of students participating in the program.
4. The extent of school board involvement with instruction.
5. Statement of insurance coverage provided by the school board.

6. Statement of insurance coverage provided by the employer.
7. Statement as to duration of agreement.
8. Signatures of representatives.

In order to provide adequate insurance coverage for the project, the School Board insurance policy was modified to provide regular school insurance coverage for students participating in an extramural program which carries the endorsed approval of the School District. In addition, students were covered by regular Workmen's Compensation which is provided for all work experience programs throughout the province of Alberta by the passing of Order-in-Council #2105/70 on November 17, 1970.

Overview of Work Station

Healy Motors Limited has been serving the community of Edmonton for forty-five years.

This establishment employs approximately 200 people and is one of the largest dealerships in Canada.

Healy Motors Limited handles all three phases of the retail automotive dealership: sales, service and auto body repair. Healy's has two business locations with the main branch located at 10620 Jasper Avenue and the Truck and Body Shop located at 10610 103 Avenue.

Students in the satellite school project were rotated through both locations. The Main Branch provided students with work experience in the office, parts department, and

automobile service while the Truck and Body Shop provided experience in the auto body shop, paint shop and truck service.

Four department heads were designated as immediate supervisors of the student-workers on the satellite school project. These four supervisors, each having had approximately seventeen years experience as department heads for Healy Motors, oversaw the job rotation system involved in the study and each department head provided the school with evaluations of student performance and progress. Mr. J. Morris, Coordinator of Parts and Service, oversaw the entire project for Healy Motors Limited.

Job Rotation System for Work Experience

Prior to the commencement of the project it was decided by both the employer and the school district that each student would be required to work in each of the five different departments of the automotive dealership for a period of approximately four weeks. In order to provide both beneficial and meaningful type of work experience for the students, the employer and the school district designed a rotation system which provided on-the-job experiences in each of the following departments: Office, Truck Service, Automotive Service, Paint and Body, and Parts. It was intended that this variety of experiences would provide the student with an overview of the automotive establishment.

At the request of the employer, all fifteen students were dressed in a standard attire which was distinctly different from that worn by Healy Motors employees. Also, all students wore name tags. These arrangements were designed to facilitate identification and communication for all persons who came in contact with the student-workers, the employer's clientele included.

The actual job rotation system for the entire project is shown in Table II on page 50.

Job Description

Although a rather detailed job description is provided for each department of the total project, it is important to note that it was mutually agreed by both the school district and the employer that the scope and depth of participation would vary in relation to the students' ability. Three determining factors were given prime consideration: the safety of the student, the educational benefit to the student and the effects on business operations.

1. Automotive and Truck Service
    a. Dismantle motors
    b. Clean parts
    c. Obtain parts from stock supply room
    d. Cleaning shop
    e. Tire repair
    f. Washing vehicles
    g. Installation of such equipment as license plates,

floor mats, hubcaps and tire change-overs

h. Assisting mechanic with tune-ups

i. Assisting mechanic with motor and power-train repair

2. Parts Department

   a. Learning parts storage system, shipping and receiving, International Business Machines stock control

   b. Learning how to use micro-film reader

   c. Receiving parts and placing in proper bins

   d. Checking parts against invoices

   e. Checking parts for correct bins

   f. Packaging orders for customers in the city and outside the city

   g. Cataloguing

   h. Loading and unloading shipments of parts

   i. General clean up

3. Paint and Body Shop

   a. Metal Repair and Parts Replacement

      Help journeyman auto body mechanic with daily work. At this point student-workers are more spectators than workers where actual repair is concerned.

   b. Paint Preparation

      Sanding and masking of vehicle prior to painting. Student-workers observe painting operation only.

TABLE II

JOB ROTATION SYSTEM FOR WORK EXPERIENCE

Weekly Units Versus Commencing Dates

1	31 Jan	6	6 Mar	11	17 Apr	16	22 May
2	7 Feb	7	13 Mar	12	24 Apr	17	29 May
3	14 Feb	8	20 Mar	13	1 May	18	5 Jun
4	21 Feb	9	27 Mar	14	8 May	19	12 Jun
5	28 Feb	10	10 Apr	15	15 May	20	19 Jun

WORK EXPERIENCE UNITS

STUDENT-WORKER	PARTS				SERVICE				BODY & PT				OFFICE				SERVICE			
A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
D	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
E	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
F	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
G	13	14	15	16	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12
H	13	14	15	16	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12
I	13	14	15	16	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12
J	9	10	11	12	13	14	15	16	17	18	19	20	1	2	3	4	5	6	7	8
K	9	10	11	12	13	14	15	16	17	18	19	20	1	2	3	4	5	6	7	8
L	9	10	11	12	13	14	15	16	17	18	19	20	1	2	3	4	5	6	7	8
M	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1	2	3	4
N	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1	2	3	4
O	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1	2	3	4

    c. Trim Department
        Students assist with repairs or replacements of interior vehicle trim, removal and replacement of exterior vehicle trim
4. Office
    a. Filing accounts payable and accounts receivable
    b. Photocopying
    c. Locating customer billings and making copies
    d. Running totals on adding machine
    e. Typing

The Role of the Teacher Coordinator

Rafferty (1965) stated that "coordination is a major responsibility of the school in the operation of a work experience program." (p. 26) The two major functions of the teacher coordinator for the satellite school project were: (1) to provide the student-workers with the moral support of the school and (2) to coordinate all of the activities associated with the work program.

The teacher coordinator visited the work station for one or more of the following reasons:

1. Visit the student and consult with his immediate supervisor.
2. Secure employer's evaluation of student.
3. Observe type of work being done.
4. Observe student-worker performance.
5. Determine how school can help or be helped.
6. Become familiar with management policies.

7. Guard against possible exploitation of student-worker.
8. Develop new work stations through employer referrals.
9. Make employer aware of school's interest and concern.
10. Explain and promote the project.
11. Establish and maintain good public relations with the cooperating employer.
12. Grade students on job performance.
13. Maintain an open communication between the school and the employer.
14. Keep and maintain records, eg. individual evaluations by students, teacher and employer.
15. Assess the entire satellite school project at the end of the first semester of operation.

It was decided that the teacher coordinator activities would be given the normally accepted amount of time allocation. M. Rafferty (1965) suggests that the teacher coordinator should visit each student on the job approximately once a month:

> It is generally recommended that the coordinator consult with the student's immediate supervisor at least four times per semester. (p. 36)

Following this general rule, each student and his immediate supervisor were visited by the teacher coordinator at least once every four weeks. With the rotation system designed as it was, this meant that the teacher coordinator visited each student in this project at least five times.

Reporting Systems

As standard procedure for work programs, each student

was rated by the employer as to job performance, personality traits, willingness to accept responsibility, et cetera. This was done by using standard report forms. The school obtained at least one such report form on student progress for each of the five areas of work experience.

In addition, each student was required to do a self-evaluation of work performance for each of the five departments which comprised the total rotation system for the project. The form used by the students was the same as the one used by the employer to rate the student. Ratings by both the employer and the student were performed independently towards the end of each work period.

The results of this comparative rating system are presented in Appendix F on page 111.

Summary

The logistics of establishing a satellite school at an employer site seem, from this experience, to require at least the following steps:

1. Considerations as to student population enrolled.
2. Development of a structure for the total operation of the school.
3. Provisions for the adequate administration of the satellite school.
4. Attention to preliminary considerations.
5. Consideration of initial assumptions as to possible benefits to participants.

6. Preliminary communications with all participants and other interested parties such as parents and public at large.
7. Provisions to meet legal responsibilities associated with the project.
8. Examination of work stations as to suitability for a satellite school project.
9. Development of an appropriate job rotation system for work experience.
10. Clarification of job descriptions.
11. Statement as to the role of the teacher coordinator.
12. Implementation of effective reporting systems.

Chapter IV

ASSESSMENT OF STUDENT GROWTH AND RESPONSES OF PARTICIPANTS

Introduction

This chapter addresses itself to the second and third purposes of this study, namely the assessment of growth for those students enrolled in this project and the responses of participants. This chapter also includes data collection, instruments used in testing and processing of data.

Data Collection and Instruments Used in Testing

Following is a restatement of three research questions basic to the purposes of this study. Each research question is followed by a description of methods and instrumentation used to obtain the relevant information.

1. Research Question Number One.

What were the logistics involved in the establishment of a satellite school based upon involvement with a business establishment?

2. Research Question Number Two:

To what extent will student involvement in a satellite school project evidence an increase in:

a) academic achievement?

b) vocational attitude?

c) occupational information?

d) self-actualization?

e) attendance?

f) intercorrelation values of the above measures?

Standard tests were administered in order to collect data on student growth in academic achievement, vocational attitude, occupational information, self-actualization and attendance. Pre-test and post-test results were obtained for all these measures, including attendance.

Academic achievement was measured by the Stanford Achievement High School Battery (Gardner, 1965) and by teacher-prepared tests.

Vocational attitude was measured by the Vocational Development Inventory (Crites, 1965).

Vocational information was measured by administering the Occupational Information Scale (Ostashewski, 1969).

Self-actualization was measured by the Personal Orientation Inventory (Shostrom, 1962).

Attendance at the satellite school was compared with the students' previous attendance records at regular community schools.

3. Research Question Number Three:

What will be the subjective responses of participants after one semester of involvement with the satellite school?

This study attempted to assess the attitude of both the employer and the students towards the project by collecting and recording positive and negative responses to the specially prepared questionnaires which were administered to both participants at the conclusion of the project.

A summary of employer responses is presented in Text Table III on page 61. A summary of student responses is found in Text Table IV on page 62. Each text table indicates the numbers of the items in the original questionnaire, along with a corresponding designation as to whether the attitudinal response was considered to be "positive", "negative" or indeterminate towards the project.

The original questionnaires completed by the employer and students are presented in Appendix G on page 113 and Appendix H on page 120, respectively, along with a response distribution for each question.

The subjective response to the satellite school project by the teacher is presented in the form of a paper in Appendix I on page 128.

As the welfare of the students who participated in the project was of central importance to the project, further subjective information was obtained from the students as follows:

a. At the completion each student was asked to make written comments on the project. A summary of responses, edited to remove offensive words, is included in Appendix D on page 98.

b. In addition, each student was asked to complete a self-evaluation of work performance for each of the five departments which comprised the total rotation system of work experience. The form used by the students was identical to the one

used by the employer to rate the student. Ratings by both the employer and the student were made independently. Appendix F on page 111 provides a comparative summary of results for these parallel ratings collected over the entire semester.

Processing of Data

In order to determine the significant differences in pre-test and post-test means on results obtained by administering the Personal Orientation Inventory: Vocational Development Inventory, Occupational Inventory Scale, Stanford Achievement Test, teacher-prepared achievement tests and attendance, a t-Test Analysis for Repeated Measures was employed (Ferguson, 1959). Since a small group of thirteen students was involved in the study and since it was considered important to become aware of the potential of the satellite school setting, the critical level of significance was set at $\alpha = 0.10$. Therefore, the restricting effects of the smallness of the sample size was counterbalanced by setting a less stringent significance level than is usual so that the possible effectiveness of the satellite school would not be masked. Since an '*a priori*' level of significance of 0.10 was set for this study, a critical value (t) of 1.78 had to be obtained.

Spearman's Rank Order Correlation Coefficient was used to determine correlations on both pre-tests and post-tests in order to provide answers to Research Question Number Two, which asks: To what extent will student

involvement in a satellite school project evidence an increase in intercorrelation values of the following measures: academic achievement, vocational attitude, occupational information, self-actualization and attendance?

Correlations were determined to examine the relationship between vocational attitude and academic achievement as determined by teacher-prepared tests and standardized tests, vocational attitude and self-actualization, self-actualization and academic achievement and academic achievement as measured by teacher-prepared tests.

Typically, the measures cited here are intercorrelated. (See Crites, Adsbury, Bartlett and Caplow on page 30 in the chapter on review of literature.)

The relationship between the variables described in Research Question Number Two, along with calculated values of 't' for each correlation is presented in Table IV on page 62.

Assessment of Student Growth

Research Question Number One reads as follows: What were the logistics involved in the establishment of a satellite school based upon involvement with a satellite school project?

This question does not address itself to student growth and is not, therefore, dealt with in this section of the study.

Research Question Number Two reads as follows: To

what extent will student involvement in a satellite school project evidence growth in academic achievement, vocational attitude, occupational information, self-actualization, attendance and in the intercorrelation values of these measures?

The assessment of this type of student growth is presented in tabular form.

The significant difference between means on pre-tests and post-tests for academic achievement, vocational attitude, occupational information, self-actualization and attendance is presented in Table III on page 61.

Correlations between vocational attitude and academic achievement, vocational attitude and self-actualization, self-actualization and academic achievement, standardized tests and teacher-prepared tests are presented in Table IV on page 62.

Research Question Number Three reads as follows: What will be the subjective responses of participants after one semester of involvement with the satellite school?

This question addresses itself, in part, to student growth in a subjective manner and is dealt with in a separate section which follows immediately.

Subjective Responses of Participants to Project

The third purpose of this study was to collect and report reactions of participants to the project. The concomitant Research Question Number Three was: What will be the subjective responses of participants (employer,

TABLE III

t-TEST FOR SIGNIFICANT DIFFERENCE BETWEEN MEANS ON PRE-TEST AND POST-TESTS FOR ACADEMIC ACHIEVEMENT, VOCATIONAL MATURITY, OCCUPATIONAL INFORMATION, SELF-ACTUALIZATION, AND ATTENDANCE

TEST	OBTAINED VALUE OF t
1. Stanford Achievement Test	
a) English	5.83**
b) Mathematics & Numerical Competence	3.34**
c) Social Studies	4.36**
2. Teacher-Prepared Tests (Core courses only)	5.01**
3. Vocational Maturity	2.00*
4. Occupational Information	1.97*
5. Self-Actualization	
a) Other Orientation: Inner Orientation	1.83*
b) Time Incompetence: Time Competence	1.97*
6. Attendance	4.38**

* Significant at 0.10 level
** Significant at 0.01 level
Critical value of t set at 1.78

TABLE IV

CORRELATIONS (p) BETWEEN VARIABLES STATED IN RESEARCH QUESTION NUMBER TWO WITH CRITICAL VALUES (t) FOR EACH CORRELATION

	VARIABLES	PRE-TESTS p	PRE-TESTS t	POST-TESTS p	POST-TESTS t
7. a)	Vocational Maturity and academic achievement as determined by Teacher-Prepared Test scores	0.38	0.49	0.60	2.48*
b)	Vocational Maturity and academic achievement as determined by Stanford Achievement Tests (combined scores)	0.23	0.78	0.49	1.86*
8. a)	Vocational Maturity and Other Orientation: Inner Orientation	0.10	0.33	0.40	1.66
b)	Vocational Maturity and Time Incompetence: Time Competence	0.12	0.40	0.44	1.62
9. a)	Academic Achievement as determined by the Stanford Achievement Tests (combined) and Other Orientation: Inner Orientation	0.22	0.75	0.70	3.25**
b)	Academic Achievement (Stanford-combined) and Time Incompetence: Time Competence	0.47	1.76	0.46	1.74
10. a)	Stanford Achievement Test and Teacher-Prepared Test	0.23	0.78	0.79	4.30**

* Significant at 0.10 level
** Significant at 0.01 level
Critical value of t set at 1.80.

students and teacher) after one semester of involvement with the satellite school?

1. Employer Reactions

Reaction to Research Question Number Three (What will be the subjective responses of participants after one semester of involvement with the satellite school?) was obtained from the employer by administering a specially prepared questionnaire at the conclusion of the project.

A four point scale was used in order to enable the respondents to express degrees of positive or negative reaction.

Five supervisors represented the employer and responded subjectively and independently to each question after one semester of involvement with the satellite school project. The original questionnaire showing a summary of response distributions is presented in its entirety in Appendix G on page 113.

Following is a text table of numbered items in original questionnaire versus type of reaction to project in terms of positive, negative or indeterminate.

Distribution of employer responses to these and other questions are found in the original questionnaire in Appendix G on page 113.

2. Student Reactions

Reactions to Research Question Number Three (What will be the subjective response of participants after one semester of involvement with the satellite school?) was

TEXT TABLE V

EMPLOYER REACTIONS TO PROJECT

QUESTION		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
REACTION	Positive	2	2	1	5	4	2	4	5	5	1	4	2	0	5	0	0	4	5	*	5	0	1
	Negative	3	3	1	0	0	3	0	0	0	2	0	0	4	0	0	0	0	0	*	0	0	1
	Indeterminate	0	0	3	0	1	0	1	0	0	2	1	3	1	0	5	5	1	0	*	0	5	3

* Written responses - reference Appendix G on page 113.

obtained from the students by administering a specially prepared questionnaire at the conclusion of the project.

A four point scale was used in order to enable the respondents to express degrees of positive or negative reaction.

As two students did not complete the project, thirteen students completed the questionnaire and care was taken to ascertain that each student completed the questionnaire without collaboration with peers. The original questionnaire showing a summary of response distributions is presented in its entirety in Appendix H on page 120.

Following is a text table of numbered items in the original questionnaire versus type of reaction to project in terms of positive, negative or indeterminate.

3. Teacher Reaction

The teacher reaction to the project was expressed in a specially prepared paper entitled "Freedom - Dignity - Leisure" which was written by the teacher at the conclusion of the project. This paper is presented in Appendix I on page 128.

TEXT TABLE VI

STUDENT REACTIONS TO PROJECT

QUESTION		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Positive	11	11	13	13	10	11	10	13	13	13	13	13	13	12	10	12	12	10	10	10	11	13	13	13
REACTION	Negative	2	0	0	0	3	0	0	0	0	0	0	0	0	1	3	1	0	1	2	3	2	0	0	0
	Indeterminate	0	2	0	0	0	2	3	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0

QUESTION		25	26	27	28	29	30	31	32	33	34	35	36	37
	Positive	11	11	13	9	5	11	3	11	10	10	9	8	10
	Negative	2	2	0	4	8	2	4	2	3	2	3	0	0
	Indeterminate	0	0	0	0	0	0	6	0	0	1	1	5	3

Chapter V

SUMMARY OF STUDY, SUMMARY OF FINDINGS AND DISCUSSION, CONCLUSION, IMPLICATIONS, AND PROBLEMS FOR FURTHER STUDY

Summary of Study

The purposes of this study were:

1. to describe a process of establishing a satellite school which included involvement with a member of the business community.
2. to assess cognitive and affective change of students enrolled in the satellite school.
3. to collect and report reactions of participants to the project.

The basis for this study is the premise that the business sector of society is willing and able to make a contribution towards the personal development of the student in both the cognitive and the affective domains.

The satellite school had its classroom located in a retail automotive establishment. The typical school day comprised a half day academics and a half day of work experience for a period of one semester. A certified teacher was provided by the Edmonton Catholic School District to teach the academic subjects, while Healy Motors Limited provided qualified and specially selected tradesmen to direct the activities of students during the half day of work experience. The entire project was supervised by the Edmonton Catholic School District.

Each student was registered for twenty credits towards a high school diploma: ten credits for the two academic subjects and ten credits for work experience.

Fifteen non-matriculation students were enrolled in, and thirteen students completed, the project. Each student took two academic subjects and while on work experience each student was rotated through four different work departments as shown in Table II, page 50.

Standardized tests were administered on a pre-test and post-test basis and specially prepared questionnaires were administered to the students, employer and teacher coordinator at the conclusion of the project. This study did not seek to test hypotheses as is typical. Rather, information is provided to answer the following research questions:

1. What were the logistics involved in the establishment of a satellite school based upon involvement with a business establishment?
2. To what extent will student involvement in a satellite school project, evidence an increase in academic achievement, vocational attitude, occupational information, self-actualization, and attendance? Also for students in a satellite school, will there be a relationship between vocational attitude and academic achievement, vocational attitude and self-actualization, self-actualization and academic achievement, academic achievement as measured by the Stanford Achievement

Test and academic achievement as measured by teacher prepared tests?

3. What will be the subjective responses of participants after one semester of involvement with the satellite school?

Results of standardized tests are intended to provide some insight into some changes in the development of the student which occurred during the project.

Summary of Findings and Discussion

Each research question is stated and highlights noted for both the statistical findings as well as the subjective findings of the study.

Research Question Number One: What are the logistics involved in the establishment of a satellite school based upon involvement with a business establishment?

Descriptive answers to this question are provided in Chapter III under the following headings:

1. Introduction
2. Sample and Population
3. Operation of the School
4. Administration of the Satellite School
5. Preliminary Considerations
6. Initial Assumptions as to Possible Benefits
7. Preliminary Communications
8. Legal Responsibilities
9. Overview of Work Station

10. Job Rotation System for Work Experience
11. Job Description
12. The Role of the Teacher Coordinator
13. Reporting Systems

Research Question Number Two: To what extent will students involved in a satellite school project evidence growth in academic achievement, vocational attitude, occupational information, self-actualization, and attendance and in the inter-correlation values of these measures?

1. Academic Achievement

Comparison of student achievement at the satellite school was made with the norm group of students described by E. Gardner in the Stanford Achievement Test (Grades 9 - 12) Manual. It was found that on the pre-test the students as a group received an achievement rating of Grade XI at the 26.9 percentile on core subjects. On the post-test the students received an achievement rating of Grade XI at the 50.5 percentile. In this regard, it is important to note that there exists a difference of approximately 10 percentile points, only, between actual grade levels for the same relative position on the normal curve.

Results of achievement as determined by the most recent teacher-prepared tests were compared with the results obtained on teacher-prepared tests at the satellite school. It was found that the mean achievement for the group while at the regular high school was 47.2 percent

and 59.5 percent at the satellite school.

A t-Test for Repeated Measures was used to answer Research Question Number One, in an attempt to determine whether or not there was a significant difference in academic achievement by the students who attended the satellite school classroom for a period of one entire semester. Both a standardized test and a teacher-prepared test were used to determine status growth in academic achievement.

The results of the application of the t-Test are provided in Table III, page 61. The obtained critical value 't' for both types of tests indicated a significant difference at the 0.10 level.

2. Vocational Attitude

The students were pre-tested for vocational maturity of attitude and their total raw score was converted to a grade level by employing the norms developed by J.O. Crites (1965). It was found that the students as a group, initially scored at an average grade 6.3 level of vocational maturity. At the conclusion of the project, the post-test results showed that these same students increased in vocational maturity to an average grade 11.2 level. In other words, at the beginning of the project, the students as a group responded to the inventory as did an average grade 6.3 of the norm group and at the end of the project, this same group of students responded in a manner similar to the average grade 11.2 student of the norm group.

A t-Test for Repeated Measures was used to determine whether or not there was a significant difference in vocational maturity of attitude by administering the Vocational Development Inventory.

The result of this application of the t-Test is shown in Table III, 61. The critical value obtained for this test was statistically significant at the 0.10 level.

3. Occupational Information

Using the means established on sixty male grade IX students who had received occupational information by a planned program of occupational presentations (Ostashewski, 1969), it appears that the students on entering the satellite school project, rated approximately the same as the students in the norm group. The mean for the norm group at the end of grade IX was found to be 25.4. The pre-test mean for the students in the satellite school project was 25.5 while the post-test mean was found to be 28.2.

The t-Test for Repeated Measures was used to test for growth in occupational information. The result of this application of the t-Test is shown in Table III, page 61.

The critical value obtained for this test was statistically significant at the 0.10 level.

For an explanation of the scale used in the Occupational Inventory, the reader is referred to Chapter II, Review of the Literature, page 9.

4. Self-actualization

The results of the Personal Orientation Inventory were compared with the normative information presented by E. Shostrom (1963). Quantitative results obtained from pre-tests and post-tests indicated that during the five month period the project was in operation, the students as a group increased by 20 percent in 'self-actualization' during the time the satellite school was in operation.

The t-Test for Repeated Measures was used to assess this aspect of Research Question Number Two. For the purpose of this study, the Time Ratio and Support Ratio were used to represent 'self-actualization'. The results of the t-Test are shown in Table III, page 61.

The critical values obtained for both the Time Ratio and Support Ratio were statistically significant at the 0.10 level.

5. Attendance

The attendance record of the students as a group at the regular high school was compared with their attendance record at the satellite school. The most recent attendance record available for high school attendance indicated that student attendance was 88.8 percent. The attendance at the satellite school of these same students was found to be 97.3 percent.

The t-Test for Repeated Measures was used to answer Research Question Number Two and the results are shown in Table III, page 61.

The critical value for attendance was statistically significant at the 0.10 level.

6. Relationship between vocational attitude and academic achievement

Post-test results only were employed to this aspect of Research Question Number Two.

The relationship between vocational maturity and level of academic achievement as determined by both standardized tests and teacher-prepared tests are presented in Table IV, page 62.

Spearman's Rank Order Correlation Coefficient was used to determine the relatedness between vocational maturity and academic achievement for each of the two types of comparisons. The critical value for both correlations on the post-tests were statistically significant at the 0.10 level.

7. Relationship between vocational attitude and self-actualization

Post-test results only were employed to examine this aspect of Research Question Number Two.

Self-actualization is represented by the Time Ratio and Support Ratio which together comprise the 150 items of the test.

The Spearman Rank Order Correlation was used to determine the types of correlations. The results of the analysis are shown in Table IV, page 62.

It was found that each of the two correlations was not statistically significant at the 0.10 level.

8. Relationship between self-actualization and academic achievement

Post-test results only were employed to test this relationship.

Self-actualization was ascertained in terms of time ratio and support ratio, while academic achievement was determined by the Stanford Achievement Test. The results of analysis are presented in Table IV on page 62.

Using the Spearman Rank Order Correlation Coefficient, it was found that the relationship between the support ratio and academic achievement was significant at the 0.10 level. It was also found that the relationship between the time ratio and academic achievement was not statistically significant at the 0.10 level.

9. Relationship between standardized tests and teacher-prepared tests

Post-test results only were employed to examine this relationship.

The Spearman Rank Order Correlation Coefficient was used between test scores obtained by using the Stanford Achievement Test High School Battery and the final marks on teacher-prepared tests. Comparisons were made on core subjects of Mathematics, English and Social Studies only. Results of analysis are shown in Table IV on page 62.

It was found that the critical value for this correlation was significant at the 0.10 level.

The Spearman Rank Order Correlation Coefficient was used to determine corresponding correlations on pre-tests. The results of the analysis are shown in Table IV, page 62. As indicated in the table, none of the correlations were statistically significant at the 0.10 level.

Research Question Number Three: What will be the subjective responses of participants after one semester of involvement with the satellite school?

This research question was tested empirically and not statistically.

1. Reaction of employers

A simple response count was employed to assess the attitude of the questionnaire administered to the employer. For the purpose of this study, five supervisors represented management and responded to questions as shown in the original questionnaire in Appendix G on page 113. A simple response count was employed in an attempt to obtain a general assessment of employer attitude towards the project.

A four-point scale was used in order to enable the respondent to express degrees of positive or negative reaction. Most response options were designed so that a clear differentiation could be made between positive and negative responses. Where this type of distinction could not readily be drawn, the item was classified as "indeterminate" and excluded from the count.

Positive responses outnumbered negative responses by 57 to 17. It is important to note, however, that certain

questions in this questionnaire are much more critical to this particular assessment than are others. In this regard the writer considers reactions to the following questions to be both comprehensive and critical to the study:

Question Number Five:

Was there a general acceptance of the satellite school project on the part of the employees?

Question Number Nine:

Did the provisions for classroom accommodation interfere with your business operation?

Question Number Thirteen:

In general, was "the right type of student" selected for the program?

Question Number Seventeen:

Would you be interested in participating in a satellite school project again during the next school term?

Distribution of employer responses to these and other questions are found in summary Text Table V on page 64 and in the original questionnaire in Appendix G on page 113.

Employer responses to items in the questionnaire were both positive and negative; however, the questionnaire showed that positive responses outnumbered negative responses by 57 to 17.

In general, the employer was sufficiently positive towards, and supportive of, the program to continue

participation for another semester of operation.

2. Reaction of students

The student reaction to the program was obtained by a specially prepared questionnaire. The questionnaire was constructed in a manner which provided the student with an opportunity to express responses on a four point scale. The scale of responses ranged from definitely positive to definitely negative. A summary of responses to the questionnaire is presented in Text Table VI on page 66 and the original questionnaire showing exact response distributions is presented in Appendix H on page 120.

A response count of the number of positive and negative responses indicated that the students were quite positive about the entire project with positive responses outnumbering negative responses 404 to 50. It should be noted, however, that not all response statements were of equal importance.

It is the writer's opinion that some of the more critical statements to the entire student evaluations were statements 13, 26, 31, 32, 33, 35, 36 and 37 which read as follows:

Statement Number Thirteen:

I feel that the Work Experience Education Program should be continued in the schools.

Statement Number Twenty-Six:

In general, I am satisfied with the school I am attending.

Statement Number Thirty-One:

In general, I found that by attending the satellite school I sacrificed too much of the social life associated with regular school.

Statement Number Thirty-Two:

I feel that my education has suffered as a result of taking classroom instruction away from the regular school.

Statement Number Thirty-Three:

If I had known upon registration what I know now, I would still be interested in attending the satellite school.

Statement Number Thirty-Five:

I found it difficult to adjust to the practise of independent study in the satellite school.

Statement Number Thirty-Six:

I liked taking classroom instruction from only one teacher for an entire semester.

Statement Number Thirty-Seven:

I would rather take classroom instruction at a regular high school than a satellite school.

The response to Statement Number Thirteen indicated that all thirteen students favoured the work experience program in the curriculum.

The response to Statement Number Twenty-Six indicated that 11 out of the 13 students were satisfied with the satellite school which they were attending. Statements Number 26, 32, 33 and 37 are confirmation of student satisfaction with attending a satellite school.

It is interesting to note that although in Statement Number 31 the majority of the students were stating that they felt they had to sacrifice too much social life associated with regular school, that in Statements 32, 33 and 37, approximately 10 of the 13 students were very supportive of attending a satellite school. Also, it is important to note from Statements 32 and 35, that students, in general, did not feel that their education suffered as a result of their participation in the satellite school, and that they did not find it difficult to adjust to a certain amount of independent study associated with the school. Along with these two types of responses, it is important to note that all of the students favoured taking classroom instruction from only one teacher for an entire semester.

3. Reaction of Teacher

A favourable reaction to the satellite school project was obtained from the classroom teacher in a form of a paper which is presented in Appendix I on page 128.

Results of questionnaires administered to the students, employer and teacher indicated that the attitude of each of these participants towards the satellite school project was generally both positive and supportive.

Conclusion

A satellite school can be of benefit to student development in both the cognitive and affective domains.

Implications

1. There exists within the immediate business community a wealth of human and material resources which is available to the education system. If this potential is tapped in a careful and appropriate manner, the mutual benefits of this type of alliance could be very significant. W. Worth (1972) states it this way:

   > Effective performance of the career function requires much closer liaison with the people of the region, especially potential employers. Increased opportunities for work study programs, improved placement of graduates, more relevant instruction, and greater community acceptance of students as individuals and consumers could result. (p. 56)

2. A satellite school might be modified so as to provide instruction of courses which would cluster around a particular occupation. That is to say that the work experience within a certain occupation could be combined with specially prepared academic courses which would be peculiar to that particular occupation.
3. Even relatively small organizations could participate in a satellite school project. A small organization could conceivably provide classroom accommodation for a far greater number of students than they could comfortably handle on the work experience part of the program. For job training, students could split off into other organizations in the same or different occupations. This approach would facilitate candidate selection for the program as these students would not have to possess a common vocational interest.

Problems for Further Research

1. Either this study or one similar in nature might be replicated using a control group and increasing the size of the sample. The personal development of the students in a satellite school could be compared with a random sample of students in a regular high school.
2. Either this study or one similar in nature might be conducted in an occupation or occupations other than automotives.
3. A study might be conducted to determine changes in directions and intensity of student interest in occupations as a direct result of their participation in a work experience program.
4. As candidate selection is usually a major concern associated with a work experience program, a study might be conducted to determine an appropriate method of selecting only those students who would be most likely to benefit from the program.
5. A survey in a variety of business organizations might be conducted to obtain employer opinion as to the types of specific personality traits deemed necessary to succeed in a particular occupation.
6. A Canada-wide survey might be conducted to determine the unique and beneficial aspects of the various types of work experience programs in operation.

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APPENDIX A

METHOD EMPLOYED IN DETERMINING THE CRITICAL VALUE (T) FOR MATHEMATICS AND NUMERICAL COMPETENCE OF THE STANFORD ACHIEVEMENT TEST

	FORM (W)	FORM (X)			
STUDENT	PRE-TEST (X) (PERCENTILES)	POST-TEST (Y) PERCENTILES)	DIFF	$Di-\bar{D}$	$(di-\bar{D})^2$
A	49	56	+ 7	- 6	36.00
B	54	50	- 4	-17	289.00
C	38	37	- 1	-14	196.00
D	12	51	+39	+26	676.00
E	45	65	+20	+ 7	49.00
F	21	37	+16	+ 3	9.00
G	53	73	+20	+ 7	49.00
H	51	78	+27	+14	196.00
I	69	78	+ 9	- 4	16.00
J	65	64	- 1	-14	196.00
K	43	68	+25	+12	144.00
L	84	76	- 8	-21	441.00
M	37	57	+20	+ 7	49.00

Calculations

$$\bar{D} = \frac{(Yi-Xi)}{N} = +13.00$$

$$S_D^2 = \frac{(Di-\bar{D})^2}{N} = 180.46$$

(Continued)

APPENDIX A

METHOD EMPLOYED IN DETERMINING THE CRITICAL VALUE (t) FOR MATHEMATICS AND NUMERICAL COMPETENCE OF THE STANFORD ACHIEVEMENT TEST (Continued)

$$\hat{\sigma}_D^2 = \frac{N}{N-1}(s_D^2) = \frac{13}{12}(180.46) = 1.08\ (180.46) = 197.60$$

$$\hat{\sigma}_D^2 = \frac{\hat{\sigma}_D^2}{N} = \frac{197.60}{13} = 15.20 / \hat{\sigma}_{\bar{D}} = \sqrt{\hat{\sigma}_{\bar{D}}^2} = \sqrt{15.20} = 3.89$$

$$t = \frac{\bar{D}}{\hat{\sigma}_{\bar{D}}} = \frac{13.00}{3.89} = 3.34$$

With an 'a priori' level of significance set at 0.10 and with twelve degrees of freedom, the critical value for these analyses was 1.78.

Therefore, a significant difference in the means for the mathematics and numerical competence portion of the Stanford Achievement Test was obtained.

APPENDIX B

APPENDIX B

METHOD EMPLOYED IN DETERMINING CORRELATIONS

STUDENT	SCHOOL MARKS (FINAL) %	VDI (RAW SCORES)	RANKS		RANK DIFF	
			SCHOOL MARK	VDI SCORES	D	D^2
A	68	36	3.5	8	-4.5	20.25
B	52	39	10.5	4.5	6	36.00
C	58	32	8	10.5	-2.5	6.25
D	50	32	12.5	10.5	2	4.00
E	60	39	6	4.5	1.5	2.25
F	50	31	12.5	12	0.5	0.25
G	60	37	6	7	-1	1.00
H	60	30	6	13	-7	49.00
I	68	40	3.5	3	0.5	0.25
J	52	43	10.5	2	8.5	72.25
K	70	46	1.5	1	0.5	0.25
L	70	35	1.5	9	-7.5	56.25
M	55	38	9	6	3	9.00

Calculation

$\Sigma D^2 = 257$

$$p = 1-6\left(\frac{D^2}{N(N^2-1)}\right) = 1-6\frac{(257)}{13(169-1)} = 1-\frac{1542}{2184} = 0.60$$

$p = 0.60$

$$t = p\sqrt{\frac{N-2}{1-p^2}} = 0.60\sqrt{\frac{13-2}{1-0.36}} = 0.60\sqrt{\frac{11}{0.64}} = 2.48$$

(Continued)

APPENDIX B

CORRELATIONS (Continued)

With an 'a priori' level of significance set at 0.10 and with eleven degrees of freedom, the critical value for these analyses was 1.80.

Therefore, correlation was statistically significant at the 0.10 level of confidence.

APPENDIX C

LEGAL AGREEMENT FORM

AGREEMENT made this 16th day of February 1972.

BETWEEN:

HEALY MOTORS LTD.,
hereinafter called
"Healy"

- and -

THE BOARD OF TRUSTEES OF THE
EDMONTON ROMAN CATHOLIC SEPARATE
SCHOOL DISTRICT NO. 7,
hereinafter called
"the Board"

WHEREAS:-

a) the Board has for some time provided a "work experience program" for some of its pupils; and

b) in the course of effecting innovative improvements it is intended that the said program be extended to include off-premises or "satellite school" instruction; and

c) Healy is willing to participate in the experimental beginnings of the said extension of the said program;

NOW, THEREFORE THE PARTIES AGREE AS FOLLOWS:

1. Healy hereby grants to the Board license and permission to use, for the holding of classes and for instruction, a portion of the premises at Healy Motors Truck & Body Shop, 10616 - 103 Avenue, Edmonton, Alberta.

(address)

(here describe the portion of the premises to be used for classes) which portion is hereinafter called "the said premises", together with reasonable ingress to and egress from the said premises and together with the licence and permission to use washroom facilities for each sex for the Board's staff and pupils engaged or involved in the said experimental program.

2. The aforesaid premises are in addition to the shop space and facilities provided by Healy with respect to the Board's work experience program.

3. It is agreed that the pupils involved will not exceed __17__ in number at any one time and that none of the said pupils will be less than __16__ years of age.

4. The Board will provide staff for the conduct and supervision of classes and for instruction and agrees to act promptly and diligently in providing for possible absence of staff due to illness or any other cause whatever.

5. The Board will maintain insurance wherein the Board and its staff and the said pupils are insureds, and whereby claims by or on behalf of Healy, its employees, customers, invitees, neighbours, visitors, as well as passers-by and bystanders are covered with respect to bodily, death and property damage.

6. Healy carries and will continue to carry garage liability insurance and insurance coverage with respect to

such claims by or on behalf of the staff and pupils of the Board with respect to premises liability or other liability arising out of the condition of Healy's premises or out of equipment or other contents of the premises, or out of any act or omission by Healy or its officers or staff.

7. The license and permission hereby granted by Healy is effective from February 1, 1972 (date) until June 23, 1972 (date).

HEALY MOTORS LTD.

Per: ______________________

____

THE BOARD OF TRUSTEES OF THE EDMONTON
ROMAN CATHOLIC SEPARATE SCHOOL DISTRICT
NO. 7,

Per: ______________________

Per: ______________________

APPENDIX D

STUDENTS' COMMENTS

- Most of the ability needed in working with motors and the car undercarriage, I have at some time done before. But anything that I didn't know before is very beneficial to me. I feel that this particular programme is very good. In fact, it's so good, it may lead into something in the future!

- The mechanics are very cooperative, moreso than I thought they would be before I even started in the Satellite School. You can communicate with them just like you can with your best friend, in my opinion.

- It's the only way you can get to know the routine in the area you are in and learn something.

- I learned a few things I didn't know before.

- They answered questions, they told you your job. They showed you how to do something if you didn't know.

- It gives you an inside look at different divisions of Healy Ford. Meeting and working with many different kinds of people.

- This type of set-up or work program gives the student a fairly good look at what working can be like. It would be especially good for the student that has never worked and wants to quit school.

- You learn all about fixing trucks.

- A person sees what automotives is really like because you work right with the mechanic.

- It showed the fundamentals of automotives.

- The people are real easy to get to know. The work was small jobs but it kept a person busy. I listened and did what the mechanic told me.

- You learn a lot of interesting things.

- I think this program was a very good experience for me.

- There were some days when there wasn't much to do, those where the days I felt out of place and not part of the work team.

- You have to take the good with the bad and vice versa.

- I like the work, most of the people are okay.

- The mornings are long but the afternoon you learn a great deal of information as to how the car business is run.

- The people were friendly and helpful when I had problems.

- I think I was a help to the partsmen.

- Things were rough at times but that's the way it is at work.

- They were all a bunch of great guys - very helpful and understanding.

- It gives me a chance to find out for myself if I want to become a mechanic.

- The people you work with will always help you when you are having problems. I learned that the work is interesting. I can work with others in a work experience situation better than in a classroom situation.

- Whatever I undertook I did well. But I don't like taking things into my own hands and working independently as I don't know enough about it.

- I would rather be doing something, unpleasant or not, than just stand there.

- I find it interesting and I am learning something about cars and how they are made because I knew nothing of it before.

- Interested in our program. You meet all kinds in the working world which is good to help you adjust to adult life.

- Very good if you are kept busy.

- I found I knew absolutely nothing about cars and the tools used in fixing them.

- My knowledge of cars is limited and I was always afraid of wrecking something and won't do much on my own.

- None of the tasks were unpleasant - they are a challenge.

- It is almost like school only the material you work at is different.

- I tried to do as they told me and make the least possible mistakes.

- I didn't really think that I didn't like any one particular area, but in general, I liked all work areas.

- I learned more about the types of work available and I definitely decided I don't want to wash cars all my life.

- I don't dig washing cars, however, I can still apply myself to the task.

- It gives a person a chance to decide just whether or not he wants this as a set goal in life.

- I regarded taking out garbages, breaking boxes, and sweeping floors everyday an unpleasant task. I didn't learn anything doing that type of work.

- Some of the areas in the future will have to be shortened in time length and some lengthened. For the reason that in some areas such a period of time is not required and in others the time is not long enough to get a proper look at a certain part of the automotive field.

- I learned alot of things and enjoyed doing things.

- Harder than I expected.

- I think I learned a lot while I was in the body shop. They always told me anything I wanted to know.

- I learned different things about cars and the operation of a car dealership which I did not know before. Whatever I accomplished seemed worthwhile to me.

- The staff treated you just like an employee.

- I feel that the next trip around, a better group of boys should be picked to make the program more worthwhile than it is now.

- When they found we could do a certain job well they were confident to let us work along.

- Some areas should be lengthened while others shortened; some of the areas should be cut out and the student should be able to pick out the areas he wants to go into.

- I'm not qualified to be fully confided in. I mean like I'm not Joe Mechanic.

- I think the program is much better than going to an established school. The freedom and responsibility is good.

- The first two weeks were very interesting, but there was too much repetition and a lack of something to do for the remainder of the time.

- There should be more rotation in the work stations, and it should be more individually orientated. The way the stations were set up I think someone sat down with a page of figures and had a lot of fun.

- I found that I learned something new or different every day. The work interested me.

- I wouldn't want this type of work as a profession, just as a summer job. To me, the work is a good pastime.

- I feel that this is a very good program, both to the student and to the company. It benefits both the student and company. I feel that this program will become a success.

- Nothing interests me enough to do it the rest of my working life.

- I complained but I worked.

- Automatic Transmission should be cut out because you just stand around and do nothing.

- I feel that the program will be a good success. You are not boarded up like you are in a school. A lot of people will probably be registering for this program next term, mainly because they want to see what it is like in the working world.

- There has to be more work for the student to do, otherwise the student looses interest.

APPENDIX E

OCCUPATIONAL INFORMATION SCALE

(O.I.S.)

DIRECTIONS TO STUDENTS:

This is not a regular school test; it is a set of questions that will show how much you know about occupations.

There is no time limit, but do not spend too much time on any one question.

It is very important that you answer every question. If you are not sure of the answer to a question, mark the one you think is most likely to be correct.

Be sure to mark your choice on the answer sheet. Make your marks dark but inside the guidelines. If your choice to a question is "b.", you mark it like this:

A 1   B 2   C 3
:::::   :::::   :::::

Be sure the number of the question matches with the number of the answer spaces in PART I of your answer sheet. Do not miss any questions.

If you want to change an answer, be sure to erase your first answer completely.

A. Each question in this set of questions gives you three choices. Show which choice you think is the best answer by putting a heavy black line in the correct space on your answer sheet. Be sure to choose only one of a., b., or c.

1. Someone who is required to have above-average eye-hand co-ordination would be . . . . . .
   a. a key-punch operator
   b. an estimator
   c. a credit authorizor

2. An applicant for apprenticeship as a . . . . must have completed two years of high-school.
   a. shirt presser
   b. masseur
   c. hairdresser

3. Training for . . . . is, for the most part, on-the-job training.
   a. tailors
   b. shoe repairmen
   c. engravers

4. The work of . . . . is most often in the field of building trades.
   a. an undercoater
   b. a cable splicer
   c. an electrician

5. . . . . usually work a regular forty-hour week.
   a. Service station attendants
   b. Chauffeurs
   c. Film editors

6. A . . . . most important function is handling correspondence.
   a. secretary's
   b. receptionist's
   c. typist's

7. A successful . . . . . . requires long term planning ability.
   a. general farmer
   b. greenskeeper
   c. sprayer

8. . . . . must follow plans precisely.
   a. A fashion artist
   b. A credit analyst
   c. An airline pilot

9. . . . . work is a relatively new field of work that is growing in importance.
    - a. An office machine serviceman's
    - b. A millright's
    - c. A boilermaker's

10. To become a . . . . a person should take a business program in high school.
    - a. mail sorter
    - b. statistician
    - c. bookkeeper

11. . . . . is responsible for keeping the cabin well heated and ventilated.
    - a. A waiter
    - b. A guide
    - c. An airline stewardess

12. A . . . . spends three-quarters of his time at indoor jobs.
    - a. mushroom grower
    - b. general farm-hand
    - c. tree-trimming foreman

13. To become a first-class . . . . . . the accepted method is training as an apprentice.
    - a. surgical dressing maker
    - b. machinist
    - c. labourer

14. A newspaper editor . . . . . .
    - a. is usually seated in the editorial room where he is subject to many distractions.
    - b. works in a quiet office where reporters, photographers and other workers hand in their work.
    - c. is not usually involved in deciding how news articles, prepared by reporters, should be published.

15. Toolmakers . . . . . .
    - a. should enjoy working outdoors.
    - b. should have better than average aptitude and ability in mathematics.
    - c. need not have a good imagination.

16. The work of construction and maintenance painters . . . . . .
    - a. is usually done by working alone.
    - b. is still seasonal to some extent.
    - c. is well protected from unskilled workers getting the job.

17. To be a successful optician a person . . . . . .
    - a. must have ability and a liking for art, mathematics and physics.
    - b. must have high academic ability so that he can succeed in the senior matriculation program.
    - c. should be sympathetic and tolerant and able to cooperate with others.

18. A hotel clerk . . . . . .
    - a. usually stands while working.
    - b. does a lot of lifting and carrying.
    - c. belongs to a strong union.

19. In preparation for a successful career as a poultryman . . . . . .
    - a. it is possible to take a two-year course at a provincial agricultural college.
    - b. a person would have to attend a university in the Faculty of Agriculture to receive formal education.
    - c. on-the-job training is all that is necessary.

20. A junior arborist . . . . . .
    - a. usually spends about half of his time in the office.
    - b. supervises labourers while they prune trees.
    - c. spends much of his time climbing trees.

21. To be able to do the work of a dental laboratory technician a person . . . . . .
    - a. must have no speech or hearing impediment.
    - b. must have good vision and sense of touch.
    - c. must have above average intelligence.

22. The work of an aerospace engineer . . . . . .
    - a. is most likely to involve missile-launching.
    - b. is most often performed in a design office, or in a research or testing laboratory.
    - c. usually involves long and irregular hours.

23. A bus or trolley coach operator . . . . . .
    - a. must be at least twenty-one years of age.
    - b. usually receive no training.
    - c. must have a grade twelve diploma.

B. Choose the statement, in each question, that is most likely to be untrue of the year 2000 A.D. Be sure to choose only one of either a., b., or c. and mark it on the answer sheet.

24. a. robot cars, buses, trains, and electronic control of traffic.
    b. a return to the more natural kinds of foods and clothing material.
    c. air-conditioned houses, cars, offices, schools.

25. a. the poor getting poorer, and the rich getting richer, in an affluent society.
    b. wrist phones, and miniature, portable T.V. sets.
    c. homes, schools, factories antiseptically and automatically cleaned.

26. a. reclaiming and repairing things to cut the expense of living.
    b. buildings without windows.
    c. climate or weather control over large sections of the world.

27. a. lengthened life-span.
    b. close to 95% of people living in cities or towns.
    c. 3 weeks paid vacations for everyone.

28. a. no increase in the length of schooling.
    b. long-term or permanent unemployment for a large segment of the population.
    c. retraining necessary several times during a career.

29. a. equality of man and woman at home and at work.
    b. nearly all unskilled jobs gone.
    c. 40 hour work-week.

30. a. movement of materials by truck and train, rather than pipelines and conveyor belts.
    b. retraining of all workers every five years for new jobs.
    c. moving from city to city every five years because of job changes.

31. a. extension of help to, and sending workers to serve in underdeveloped countries.
    b. men preferred to women on the job because of their greater physical strength.
    c. irrigation and reclamation of desert lands.

C. In each question, choose the occupation you think will provide employment for a larger percentage of the labour force than it does now. Be sure to choose only one of a., b., or c. and mark it on your answer sheet.

32. a. Policeman
    b. Business management consultant
    c. Farm worker

33. a. Physician
    b. Coal miner
    c. Draftsman

34. a. Bricklayer
    b. Writer
    c. Bus driver

35. a. Rubber worker
    b. Trapper
    c. Teacher

36. a. Salesman
    b. Conductor
    c. Metallurgist

D. In each question, choose the occupation you think will probably provide employment for about the same percentage of the labour force as at present. Be sure to choose only one of a., b., or c. and mark it on your answer sheet.

37. a. Advertising man
    b. Court reporter
    c. Dietician

38. a. Warehouseman
    b. Travel agent
    c. Plastics worker

39. a. Watchmaker
    b. Weather forecaster
    c. Bank teller

40. a. Telephone installer
    b. Routeman (bread, milk)
    c. Psychologist

41. a. Mechanical Engineer
    b. Plant manager
    c. Logger

E. In each question, choose the occupation you think will probably provide opportunity for employment for a smaller percentage of the labour force than it does now. Be sure to choose only one of a., b., or c. and mark it on your answer sheet.

42. a. Meter reader
    b. Bank manager
    c. Civil engineer

43. a. Dentist
    b. Printer
    c. Plasterer

44. a. Pharmacist
    b. Labourer
    c. Recreation director

45. a. Longshoreman
    b. Accountant
    c. Agricultural technologist

Check to see that you have answered every question -- it is very important that you do.

APPENDIX F

COMPARATIVE SUMMARY OF WORK PERFORMANCE EVALUATIONS: EMPLOYER EVALUATION OF INDIVIDUAL STUDENT VERSUS STUDENT SELF EVALUATION

STUDENT	EMPLOYER'S RATING (E)	STUDENT'S SELF RATING (S)	DIFFERENCE* (S-E)
A	2.9	3.6	+0.7
B	3.3	3.1	-0.2
C	2.9	3.3	+0.4
D	2.6	3.3	+0.7
E	2.9	3.1	+0.2
F	2.7	2.9	+0.2
G	2.6	2.9	+0.3
H	2.8	3.9	+1.1
I	3.3	3.1	-0.2
J	3.2	3.2	0.0
K	3.0	3.4	+0.4
L	2.7	3.5	+0.8
M	2.8	3.6	+0.8
Mean	2.9	3.4	+0.5

Rating Scale:
5 - Outstanding
4 - Above Average
3 - Average
2 - Below Average
1 - Unsatisfactory

* + indicates student rated himself higher than did employer.
− indicates student rated himself lower than did employer.

APPENDIX G

SATELLITE SCHOOL QUESTIONNAIRE

REACTIONS BY SUPERVISORY PERSONNEL: (N=5)

1. Did you feel that you understood the Satellite School Program prior to your participation?

1	1	3	0
Yes, Very Well	Yes	Not Well	No

2. Did your employees have a good understanding of the purpose of the Satellite School before they came in contact with our student workers?

0	2	3	0
Definitely Yes	Yes	Not Well	No

3. How would you describe the attendance of the student workers?

0	1	3	1
Excellent	Good	Fair	Poor

4. Was there a spirit of co-operation between your regular employees and our student workers?

5	0	0	0
Yes, in most cases	Yes, in some cases	Difficult to say	No

5. Was there a general acceptance of the Satellite School Project on the part of your employees?

2	2	1	0
Definitely Yes	Yes	Difficult to say	No

6. Was school co-ordination of students on the job adequate?

	2	2	1
Definitely Yes	Yes	No	Definitely No

7. What apparent effect did the student workers have on your total work output?

1	1	3	0
Increase	Difficult to Say	Zero	Decrease

8. Did you find it unwieldy to accommodate a total of fifteen students in Work Experience at one time?

0	2	3	0
Definitely Yes	Yes	No	Definitely No

9. Did the provision of classroom accommodation interfere with your business operation?

0	0	3	2
Yes, significantly	Yes, somewhat	Not significantly	No, Not at All

10. Was there a significant increase in operating expenses which you might directly attribute to your participation in the Satellite School Project?

0	2	2	1
Definitely Yes	Yes	Difficult to Say	No

11. Do you feel that, after approximately five months of operation the Satellite School has affected significantly the rate of depreciation of buildings and equipment?

0	0	1	4
Definitely Yes	Yes	Difficult to Say	No

12. What observable effect did the project have on the morale of your staff?

0	3	2	0
Positive	Difficult to Say	Zero	Negative

13. In general, was the "right type of student" selected for the program?

0	0	1	4
Definitely Yes	Yes	Difficult to Say	No

14. How many of the student workers showed a marked improvement in each of the following areas during the five months with your organization?

	All	Most	Few	None
(a) attitude?		2	3	
(b) job skills?		1	4	

15. How many of the fifteen student workers involved in the project would you consider hiring if permanent job placements were available?

0	0	5	0
All	Some	Few	None

16. How many students presented what you might consider to be an attendance problem?

0	2	3	0
All	Some	Few	None

17. Would you be interested in participating in a Satellite School Project again during the next school term?

0	4	1	0
Definitely Yes	Yes	Undecided	No

18. If yes to #17 above, what is the optimum number of students which your organization could accommodate in a Satellite School?

0	0	4	1
30 - 20	20 - 15	15 - 10	10 - 5

19. Now that you have had approximately five months of experience with the operation of a Satellite School, what would be some of your suggestions for the improvement of this type of operation?

- From Accounting and Clerical viewpoint - (1) I would like students with more aptitude for this type of work (2) Consider staggering time allotment per student per department so that each may spend more time in area of his particular interest and little time in area of non-interest.
- It would help a great deal if the students were thoroughly screened so that only the students that were truly interested in work experience would be accepted in the program.

- A full-time co-ordinator and/or counsellor - Active interest on the part of the principals and from schools represented - Duration reduced to one-half semester - Greater candor between school system and employer regarding student records - A "home room" teacher should act as liaison between the limitations of the student and the requirements of the employer, bearing in mind that the primary goal is to develop a better student understanding of the world of work - rather than demonstrating to the employer the field of modern education.
- Regular supervision by school board. Shorter term. 50% work - 50% school - full days. Staff supervisor (principal of school) should have interest and visit on a irregular basis. Adult type of teaching, ie. not visiting museum etc. Staff of employer to have opportunity to speak weekly to class re relating school vs work and progress.
- Would suggest the manager of each department involved be fully responsible for the discipline and complete management of the student while same are in his custody. Possibly a reversal of the student's day would be beneficial - work experience in the A.M. and classes in the P.M.

20. What observable effect did the project have on your clientelle?

0	0	5	0
Very beneficial	Beneficial	Neutral	Negative

21. Do you believe that the students should be readily distinguishable from your staff?

2	2	1	0
Yes, definitely	Yes	Possibly	No

22. Do you believe that students made career decisions as a direct result of your Satellite School Project?

0	1	3	1
Yes, all	Yes, some	Very few	None

APPENDIX H

SATELLITE SCHOOL QUESTIONNAIRE

REACTIONS OF STUDENTS: (N=13)

Your opinion regarding the statements below will aid in evaluating the Work Experience courses. Please check the one that applies.

A. As a consequence of my participation in the Work Experience Education Program:

1. I feel that my high school program is preparing me for the kind of work I would like to do.

1	10	2	0
Definitely Yes	Yes	No	Definitely No

2. I have a more realistic idea of my capabilities.

1	10	2	0
Definitely Yes	Yes	Somewhat	No

3. I feel that I made more progress than I would have by staying in regular classes.

10	3	0	0
Yes, definitely	Yes	Difficult to Say	No

4. I am looking forward to going to work.

5	8	0	0
Definitely Yes	Yes	No	Definitely No

5. I see the need for acquiring vocational knowledge.

2	8	3	0
Definitely Yes	Yes	No	Definitely No

6. I feel that students from this program will be accepted on the job.

2	9	2	0
Yes, in most cases	Yes, in some cases	Difficult to Say	No

7. I feel more confident in applying for a job.

6	4	3	0
Yes, significantly	Yes, somewhat	Not significiantly	No, not at All

8. I am more aware of the responsibilities related to a job.

7	6	0	0
Definitely Yes	Yes	Difficult to Say	No

9. I see the importance of learning to follow instructions.

8	5	0	0
Yes, definitely	Yes	Possibly	No

10. I see the need for learning to work with other people.

8	5	0	0
Definitely Yes	Yes	No	Definitely No

11. I recognize the importance of developing skill in all kinds of communication.

3	10	0	0
Yes, very well	Yes	Not well	No

12. I feel I have learned quite a bit about how a business functions.

8	5	0	0
Definitely Yes	Yes	No	Definitely No

13. I feel that the Work Experience Education Program should be continued in the schools.

5	8	0	0
Yes, Definitely	Yes	No	Definitely No

B. This evaluation indicates the student's opinion regarding the work stations.

14. Sufficient time was spent initially in introducing me to the job situation.

0	12	1	0
Definitely Yes	Yes	No	Definitely No

15. Sufficient time was spent by the supervisor in giving me continuing instruction?

0	10	3	0
Definitely Yes	Yes	No	Definitely No

16. There was sufficient variety of assigned tasks to make the job interesting.

4	8	0	1
Yes, Definitely	Yes, in most cases	Occasionally	No

17. The assigned tasks were in keeping with my ability.

3	9	1	0
Yes, definitely	Yes	Not really	No, not at all

18. The other employees accepted me as one of the group.

6	4	2	1
Yes, in most cases	Yes, in some cases	Difficult to say	No

19. Given the opportunity, I would work for this company.

6	4	2	1
Yes, definitely	Yes	Not certain	No, definitely

C. This scale rates the student's attitudes towards education. Rate each statement by checking the one that best described your attitude.

20. My education will give me a good chance of getting the kind of job that I would like to have after leaving school.

1	2	7	3
Strongly disagree	Disagree	Agree	Strongly Agree

21. The courses that I am taking in school will help me be successful in that job.

0	2	10	1
Strongly disagree	Disagree	Agree	Strongly Agree

22. There is a relationship between education and work.

0	0	12	1
Strongly disagree	Disagree	Agree	Strongly Agree

23. I believe I have the capacity to succeed.

0	0	9	4
Strongly disagree	Disagree	Agree	Strongly Agree

24. My success will be dependent on my effort.

0	0	5	8
Strongly disagree	Disagree	Agree	Strongly Agree

25. Education increases self-confidence.

0	2	10	1
Strongly disagree	Disagree	Agree	Strongly Agree

26. In general, I am satisfied with the school I am attending.

1	1	10	1
Strongly disagree	Disagree	Agree	Strongly Agree

27. Attending school regularly is important.

0	0	10	3
Strongly disagree	Disagree	Agree	Strongly Agree

28. In general, I am satisfied with the courses I am taking.

3	6	4	0
Yes, definitely	Somewhat	Difficult to Say	Strongly disagree

29. I enjoy school-sponsored extra-curricular activities.

3	5	4	1
Very much	Yes	No	Definitely No

30. In school, I am learning habits and attitudes which will guide me in the achievement of a worthwhile life.

1	10	2	0
Definitely Yes	Yes	No	Definitely No

D. This scale rates the students attitude towards the concept of attending a classroom which is located within a business establishment. Please rate in the same manner as section C above.

31. In general, I found that by attending the Satellite School, I sacrificed too much of the social life associated with regular school.

4	6	3	0
Yes, definitely	Somewhat	Not really	No

32. I feel that my education has suffered as a result of taking classroom instruction away from the regular school.

0	0	2	11
Yes, definitely	Yes	Somewhat	No

33. If I had known upon registration what I know now, I would still be interested in attending the Satellite School.

4	6	3	0
Definitely Yes	Yes	No	Definitely No

34. As a result of my participation in the Satellite School Project, I am now able to make a more rational choice of future employment.

4	6	2	1
Yes, definitely	Somewhat	Difficult to Say	No

35. I found it difficult to adjust to the practice of independent study in the Satellite School.

1	2	1	9
Yes, in most cases	Yes, in some cases	Difficult to Say	No

36. I liked taking classroom instruction from only one teacher for an entire semester.

8	5	0	0
Definitely Yes	Somewhat	Difficult to Say	No

37. I would rather take classroom instruction at a regular high school than at a Satellite School.

0	0	3	10
Yes, definitely	Yes	Difficult to Say	No

APPENDIX I

REACTION OF TEACHER

PAPER SUBMITTED BY TEACHER MR. JOHN MACNEIL

FREEDOM-DIGNITY-LEISURE

What does this program provide for the individual? Ideally in a word, "growth". How does one measure this "growth" is the most important question.

Is the individual important? Who is he? Generally he is the forgotten, the anonymous, the drop-out, or potential drop-out - the problem student. So he hasn't been important.

It is interesting to note that in my small class I did get a variety of individuals from many kinds of backgrounds in school experiences. Some, it was found out, were potential leaders. Others found it difficult to break out of old habits such as apathy and laziness which are the greatest deterents to personal development.

Speaking subjectively, the Satellite School has been a valuable and a valid entity both as an experimental innovative project and a practical exercise in educational learning. Students were led out of anonymity, apathy, indolence, and failure into a growth situation that can generally be called successful.

The Satellite School provided a number of good things for the student. It gave them a "bird's eye view of the world of work" and provided for a growth situation that would not normally occur in the normal school environment.

It is interesting to note that some of the philosophical concepts that were incorporated in Satellite School are not really all that new. At times, the teacher realizes that he is back in the old one room school house. At other times, he feels that he is part of a new creative force in education. One becomes completely involved in this type of project to the point of sometimes wondering whether you are teacher curriculum planner or technician.

The most striking and significant element of the academic situation was the pupil-teacher ratio of fifteen to one. This can be considered an absolute necessity for the individual attention that was needed for the type of student we had.

When students first embarked on this project, they found that they were new not only to each other but to a new situation as well. All of the accompanying fears, and self-assertions, and testing one another, are very much in evidence. We proceeded from this point travelling a road that most times seemed as though we were going simply from crisis to crisis.

Students as always, and anywhere else in schools, need sterness, strictness, discipline, positive reinforcement, cajoling, coaxing, begging, pushing and so on . . . As time went on, there developed a sense of pride in the fact that they were doing something different - a sort of sense of pioneer spirit. Individuals began to come out of their various shells. Reinforcement and pride

then began to propel them in some instances to great strides in educational growth.

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